GAS JOURNAL, FEB. 15, 1939

VOL. 225. 91st YEAR. No. 3952.

Editorial Notes

The B.I.F.

THE British Industries Fair opens on Monday next and will continue till Friday, March 3. At the Birmingham Section at Castle Bromwich the Gas Industry will be represented by exhibits covering 32,000 sq.ft. of stand space—double the space taken when, in 1928, the first effort at a comprehensive co-ordinated exhibit was made. About 70 firms of gas equipment makers will have their displays in the Gas Section, situated appropriately enough in the centre of the huge Fair Buildings, and judging from previous years they will combine to make not only a very attractive but also a highly impressive showing. Gas appliances of to-day, with their gleaming chromium plate, their streamlined design, their clean—indeed, beautiful—enamel finishes are in themselves satisfying objects of display; when shown to their best advantage, as they will be at Castle Bromwich, the composite effect will provide a wonderful example of the modernity of the Gas Industry and will give a glimpse of its magnitude, its vast resources, its innumerable services to home and industry, and its spirit of enterprise. The display will also give some indication of the Industry's unity. It will have a high prestige value.

But it is not just a question of appearance or the art to which display can be carried. There are the aspects of increased efficiency in use and other technical advances. These advances in gas consuming equipment are to be seen and admired at Castle Bromwich; and it is up to the personnel of the gas making and supplying and sales sides of the Gas Industry to back up the outstanding efforts of the equipment manufacturers by visiting the Fair and inspecting the improvements on view. In past years there has in this regard been a notably good response; we hope for a similar or even better response at this year's Fair. As before there is to be a British Gas Federation Conference. This will bring together all sections of the Industry. It is to be held on Tuesday, Wednesday, and Thursday, Feb. 28, March 1 and 2, and the lightness of the business programme will permit of ample time for examining what the manufacturers have on show. Then, during the first week of the Fair, official visits have been organized for members of the Junior Gas Associations on Thursday, Feb. 23, and for Salesmen's Circles on Friday, Feb. 24. We look to record attendances on these occasions.

Visitors to Castle Bromwich include architects and builders, heating and ventilating engineers, lighting experts, as well as the general public. They will be well rewarded by close inspection of the Gas Section. Industrialists, too, are well catered for. The stand of the British Gas Federation will typify the collaboration which so happily exists between the Gas Industry and the furnace and industrial gas equipment manufacturers. This will be a fine collaborative effort—a vivid display demonstrating to the industrialist something of what the Industry has to offer in heat service in the industrial field.

Included in this issue of the "JOURNAL" is a Special Supplement giving an illustrated account of the exhibits which will be staged in the Gas Section and of displays of direct interest to the Gas Industry in other Sections of the Fair. To those who are able to visit the gas display at Castle Bromwich it should serve as a most convenient and useful guide. To those less fortunate it will also prove useful as an indication of the way in which the manufacturers are striving successfully towards better gas service in home and industry. Also, the value of our Special B.I.F. Number to-day is enhanced to a greater degree than ever by the wealth of displayed advertisements. The announcements of the manufacturers are set out in a thoroughly up-to-date manner in keeping with the attractive and colourful display at Castle Bromwich. There is a splash of colour about many of the advertisement pages in our issue which reflects the modern trend. It also reflects the policy of the "JOURNAL" to cater for the modern demand and, while satisfying present needs, to look to the requirements of to-morrow.

Research

IT is common knowledge that for a long time the Gas Industry has been discussing the Research Association idea. The whole matter is, of course, *sub judice*, but we have reason to think that the responsible department of the Government would be willing, very willing, to co-operate with the Industry on a reasonable basis. If the Industry showed its readiness to find funds—a minimum sum is now specified—then public money would be forthcoming. The pros and cons of a Gas Industry Research Association are in the air. Again it is common knowledge that a section of thought in the Industry doubts the wisdom of the establishment of any

such association. It believes that money could be better spent in a more direct way rather than on what it considers may well prove to be diffuse.

Research has done a very great deal for the Gas Industry, and some of its more humdrum research has not benefited it the least. The Industry holds its research meetings, and these meetings have unquestionably proved of the utmost value. They have fostered that spirit of investigation, that long-term policy, without which progress cannot be made. It is a good thing for the Gas Industry that theory is now chained to practice. The chain is not very strong, but it has at least been forged. Research is in being, and we suggest that what there is of it is being conducted well in spite of many handicaps of a purely practical nature. For example, what accommodation does the Gas Industry provide at Leeds University?

The Gas Industry is research-minded. Let us have Research! The cry is general enough. Research workers are living in a land of milk and honey—and some kudos—compared with the past. And yet we have had an amusing experience within the past two months or so. We have asked many practical gas engineers recently whether they believed in Research. "Of course we do," has been the immediate response. And we have followed our question up by another, and perhaps more pertinent one. "What particular line of research would you like to pursue?" has been our enquiry. It has caused hesitancy and little positive rejoinder. The general replies have been to the effect that—"Well, the gum problem has been nicely settled; we know where best to dry our gas; we know that the Institution and Leeds University are busy with the all-gas era and that they are actively sponsoring collaboration with the Fuel Research Board. We know, too, that many individual undertakings are tackling their own individual problems in a most efficient way, and that special committees, sub-committees, and panels are sitting on most problems; and we are also aware that co-operation is being strengthened between the research bodies of the Industry and other outside, yet allied, research organizations. As to a new, particular line of research to pursue, we frankly have little suggestion to make."

The Association Scheme

WHICH, of course, has left us somewhat in the air. We are glad, though, that, compared with even a few years ago, there is now a greater measure of co-ordination of research in the Gas Industry. Whether this could to advantage be carried even further we are not at the moment prepared to discuss, but there is no doubt that the question whether the Industry shall or shall not take advantage of public funds by way of a research association, or in some other manner as is the case with the British Iron and Steel Federation, is a matter of importance.

We have been led to the foregoing thoughts on research after reading the Report for the year 1937-38 of the Department of Scientific and Industrial Research (H.M. Stationery Office, 3s.), in which attention is drawn to the growth of the research association scheme. The development of the scheme can be visualized if we mention that the total sum now subscribed by industry for the purpose exceeds a quarter of a million pounds per annum. D.S.I.R. grants now total £145,000 a year. Arrangements have been made by which consideration of individual associations will be spread over several years. Normally the grants for any association will be fixed for five years, and it is the intention of the D.S.I.R. to make a review of the work and progress of the association at the end of that time before recommending grants for a further period. Reference is made to the scheme of the iron and steel industry, and this should interest the Gas Industry. There is no separate autonomous association in this industry, and the Industrial Research Council of the British Iron and Steel Federation, which exercises the necessary central control, is approved by the Department for grant under the research association scheme. The Research Council has now been in existence for ten years. It has no central laboratories of its own; all the work is carried out in the laboratories of other organizations. An extensive scheme of research has been developed which has involved an increase in the annual expenditure from £11,124 in 1929 to £39,554 last year and for the current year an estimated figure of £50,000. To encourage the Federation to expand still further the work of its Research Council the D.S.I.R. has recommended grant assistance for the next five years which will provide a total annual sum of £60,000 if the necessary additional support from the industry is forthcoming. An annual income of £60,000 is to be envied.

In the "JOURNAL" for Dec. 21 we commented on the growth of the British Coal Utilization Research Association, formed in April last. It was started with a minimum income of £18,000. Actually, being in receipt of the most favourable scale of grant which the Advisory Council of the Privy Council for Scientific and Industrial Research adopts for any of its research associations, its income for 1938 was £29,000—an income assured for five years. Steps are being taken to augment the income, and we have no doubt they will be successful. The Association has already enjoyed a good measure of publicity.

"A review of the grant in aid which is available for the industrial research associations," state the Advisory Council in their report, "has provided us with much encouraging evidence that the movement continues to make steady progress. But what we have found more encouraging even than the increased efficiency of the research associations has been the evidence of the growing value which industrial leaders set upon research." And the Council go on to state a view which we have often expressed in these columns and which is worth emphasizing once again: "We do not forget that the research-association movement forms but a part of the research activity of industry, and our own particular interest in the associations is coupled with a full appreciation of the true and very considerable worth of the many laboratories maintained by individual firms in industry, for we are convinced that the private laboratories and the research associations have complementary and equally vital contributions to make to the scientific well-being of industry."

Broadening the Basis

WITH the arrival of this period of the year, which brings in its train the annual meetings of proprietors in so many of the principal gas undertakings, it becomes obvious that the results of working in 1938 have been, generally speaking, very much what one would have expected. Circumstances entirely outside the control of the Industry have exercised their inevitable influence towards a reduction in the demand for gas in certain directions, and a number of undertakings are reporting small—mostly quite trifling—recessions in sales, when the achievements of the past twelve months are compared with those of 1937. From time to time, much has been laid at the door of the Industry, but we have not so far noted

that anyone has attempted to cast upon it responsibility for abnormal weather conditions, or for restraint upon business activities brought about by a disturbed international situation. And these are the influences which have affected it adversely during the past year.

Passing phases, little likely to stand up to the law of averages! Insufficient, surely, to afford sound justification to prophets of ill? An incentive, rather, to a study of normalities; to a turning aside from the abnormalities of the moment, in the belief that "the best of prophets of the future is the past." Because the seasons of 1938 were somewhat "out of tune," even for this country, and because there have been certain untoward happenings abroad, the great Gas Industry is no less vital to the community than it was before, and the field open to it is no more circumscribed. Springs and autumns of the customary pattern will return, and dark clouds will no doubt in due course disappear from the political horizon, making way for a return of that confidence without which really good business times are impossible. Then that progress which has been temporarily slowed-down will be resumed. Nevertheless, it must not be forgotten that, now or at some other time, there may be a repetition of the experiences of the past year, and so we find, in the statements from the Chair being made at Gas Company meetings, the greatest possible satisfaction at the proof afforded of unceasing efforts to broaden the basis upon which the demands for gas are founded. It is, of course, hopeless to imagine there could be any "load" which could adequately take the place of business lost through lack of public confidence, but there are, at any rate, directions in which unseasonal weather conditions can be ignored, either wholly or partially.

265 Million Cu.Ft. in a Day

THERE were a number of "high lights" in the Address of the Governor to the proprietors of the Gas Light and Coke Company, but probably most of those who listened to it, or who have read it, will agree that the "highest" was provided by his description of what is being done to broaden the basis of business by the gas undertaking which, on Dec. 21 last, reached the remarkable peak in output of 265 million cu.ft.—17 million cu.ft. above the Company's previous record, and, as the Governor said, "by far the largest amount of gas ever supplied in a single day by any undertaking in the world." Needless to say, both personnel and staff were equal to the emergency, severe as was the strain; for: "Gas never lets London down." Think of the purposes, and the number of instances for each purpose, for which gas was being used. Think of a demand in one single day for as much gas as would have adequately supplied quite a fair sized town for a twelvemonth, and then try to visualize what it would have meant if gas *had* let London down. A cynic might suggest that it would probably have resulted in an appreciation by the public of the service of gas in a measure properly commensurate with the value of this service. But we would prefer that the lesson should be brought home to the community by less drastic means.

That is why we feel that Sir David Milne-Watson's Address to his proprietors cannot be too widely made known. We must tell, and keep on telling, the public to what an extent modern home life and present-day industry depend upon the vital Gas Industry, which can also offer invaluable help in bringing about a "smokeless England." There is no need to repeat here Sir David's arresting facts; the Address is reproduced on later pages of this issue. But we would, on behalf of ourselves and all concerned, thank him for having placed at the disposal of the Industry so much magnificent material for propaganda work, and so many incontrovertible proofs that, by broadening the basis upon which the demands for gas are founded, the Industry is building up for itself a future that will be at least as brilliant as its past.

Thermometers and Therms

MENTION has already been made of the effect upon gas consumption of the abnormal weather conditions which obtained in parts of the spring and autumn of last year. This is a matter which was dealt with also by the President (Mr. Frank H. Jones) in his Address at the meeting of proprietors of the South Metropolitan Gas Company. As he then said, after due consideration has been given to the efficiency and consequent economy of modern gas appliances, and to the changing social conditions which react on consumption per consumer, "the chief fact remains that temperature is our strongest ally or our strongest competitor, and that the higher the thermometer the fewer the therms." This is the situation which the Industry found itself up against: "Last March, every day of the month was warmer than the corresponding day in 1937. In fact, on two days the temperature rose to 67°—a temperature which holiday makers in July and August must have envied. The average temperature for the month was no less than 10° above the average for March, 1937. Again, last November the average temperature was 7° above that for the month in 1937, and on some days it was as much as 24° higher." It is true that compensation later arrived in the shape of a "White Christmas"—and thereafter—but this came too late entirely to offset the unseasonable spring and autumn. A thoroughly wet and cold summer—perish the thought!—might have evened things out, but the Gas Industry would never wish for business bought at such a price as this.

We must resign ourselves to the fact that, so far as the gas fire and cognate loads are concerned, thermometers and therms are inextricably inter-related: and we must be unrelaxing in our efforts to leave no load uncultivated that may be independent of "degrees Fahrenheit." In this connexion, the water heating load must at once spring to the mind—and to a large extent the lighting load. Both in the Gas Light and in the South Metropolitan areas there are numberless industries which do, or could, use gas for one or more processes. New adaptations are constantly being made, and though these considerations do not affect the influence of the thermometer upon gas fire therms, their effect is to reduce the importance of that influence upon the business as a whole. "There is safety in numbers—of uses for gas." A good slogan for the gas salesman.

While rising temperatures and rising coal costs are beyond the control of the Gas Industry, those matters which come within its orbit present solid cause for congratulation. Increases in numbers of consumers are general—a vitally important aspect of the "widening of the basis of business." Mr. Frank Jones reminded the proprietors of the South Metropolitan Company that a further increase in the previous record total of consumers is a tribute to the value which the public places upon gas. There are now getting on for half-a-million of them in the Company's area, so that there need be no fear on this score. Additional consumers provide further opportunities, and these opportunities of applying gas to additional purposes should materialize under the Company's recently introduced optional two-part method of charge. The aim of the Company is the provision of a complete, labour-

free, and smokeless fuel service, at a cost within the means of their consumers as a whole. "I am glad to say," continued Mr. Frank Jones, "that we have met with the most encouraging co-operation from the London County Council and some other progressive landlords, municipal and private." They have agreed to collect the standing charge of the optional two-part tariff with the weekly rent, and hand it on to the Company. It is not surprising that this method, adapted, as it is, to the normal weekly budgeting of the households concerned, should be appreciated by the tenants.

It would be difficult to find anything in the proceedings at the meeting of either of these two great Companies which might rightly be assumed to suggest that the expansion of the Gas Industry is within reach, or even within sight, of its end.

The Square Deal

A MEMORANDUM has now been issued to the Press indicating that the Railway Companies and the representatives of the Road Traffic Interests have arrived at a certain measure of agreement. The Memorandum includes a general sketch of the agreement, which will now be submitted to the Transport Advisory Committee.

In the absence of fuller details it is impossible to forecast the views of the Industry in the matter. The proposals for the safeguarding of trade and industry are, of course, all-important. The Railways deny that if freed from their present obligations in respect of undue preference they have any intention of using their freedom coercively; it is, they maintain, "an explicit part of their proposals that they should charge reasonable rates and that there should be a right of appeal by traders on the question of reasonableness to a Tribunal."

It is assumed that this Tribunal would be the Railway Rates Tribunal, to which it is proposed to add a member to represent the road haulage interests. If this is the case traders will doubtless require to know upon what basis the standard of reasonableness will be adjudicated. In the past the Railway Rates Tribunal has been fettered by the over-riding requirement of the Railways Act, 1921, that the Railways should secure their standard revenue. So long as that revenue was not obtained—and it never has been—the scale was necessarily weighted against the trader.

In the Memorandum it is suggested that the Tribunal should have regard to "the rates charged for traffic of the same description carried under identical conditions between the same points, and to the rates charged by competing forms of transport as agreed with them, with a view to avoiding uneconomic transport rates." We must admit that this seems to us somewhat nebulous.

The Memorandum concedes that the ultimate objective is the co-ordination of all forms of transport. "The two forms of transport," it concludes "will continue to exist side by side as competitive but co-ordinated agencies. The competition will, however, be of a different kind, for under a correlated system of rates it will more than ever be the object, and the interest, of each to win traffic by the quality of the service which it renders." It is difficult to imagine that the traders of the country desire the continuation of price-cutting competition between rail and other transport interests. Such competition can only tend to maintain at an artificially high level the Railway rates applicable to heavy commodities such as coal, upon which our Industry depends. Such traffics cannot, except in small quantities, leave the rails, and have too frequently been made to bear the weight of any uneconomic terms offered to attract other commodities from the road.

On the other hand, a combination of the various forms of transport designed solely to maintain unduly high rates would not be in the interest of the Industry or of the country as a whole.

The Industry has already had bitter experience of the effect of the coal monopoly, and appeals to Committees of Investigation do not inspire confidence in this particular form of "safeguard." The proposals contained in the Memorandum will, if accepted, require legislative sanction, and it is obvious that when they are placed before Parliament they will require and receive the closest investigation.

An Opportunity for Coke Salesmen

The recent expansion of the London and Counties Coke Association to include the big majority of gas undertakings south of a line drawn roughly from the Wash to the Bristol Channel has greatly increased the potential membership of the Coke Salesmen's Circle. There appears, however, to be little noticeable difference in the actual attendance figures at Circle meetings. This is unfortunate, for in membership of this Circle exists an admirable means of improving the technical and sales knowledge of those engaged on the coke marketing side of the Gas Industry. The facilities which membership of this Circle have provided for several years past have been acknowledged as being of considerable benefit to those who have attended. The attendances of members from the more distant areas—particularly the West—have, however, been disappointing. The journey is in many cases a long one; on the other hand, the meetings are held only once a quarter, and we feel that the chiefs of undertakings which are now benefiting from membership of the L.C.C.A. would be ready and willing to encourage the members of their staffs to attend if the advantages were better realized. Once salesmen have attended Coke Circle meetings—which, as reports published in the "JOURNAL" show, provide a valuable source of information and opportunity for interchange of views and experiences—they will fully appreciate their worth.

The next meeting of the Circle is to be on March 15, when Mr. G. Dougill, of the Gas Light and Coke Company, is to read a Paper on the subject of "Coke from the Production Side." This early intimation will enable those from farther afield to make arrangements to attend. Moreover, their presence in London may well provide the occasion for discussing the formation of district circles on similar lines to the parent body; this would have the effect of overcoming the geographical disability which appears to be the chief difficulty at the moment, and at the same time give every coke salesman in the area of the L.C.C.A. the advantages of membership of a circle.

A NEW BOOK ON COKE.

Copies are now on sale, and will be available for inspection on the "GAS JOURNAL" stand at the B.I.F., Castle Bromwich, of a new work on coke by F. M. H. Taylor, Ph.D., B.Sc.

It is believed that this book, "Production and Utilization of Coke," will fill a long-felt want for authentic information on the principles and details of design and construction of coke-burning appliances, and the trends in coke production as affected by marketing conditions.

The book will make a wide appeal not only to gas undertakings, but to the coke-oven industry, heating engineers, architects, fuel factors, and many others in the ever-widening circle of those interested in the supply of the Gas Industry's solid smokeless fuel.

The 278 pages are illustrated with 91 diagrams and photographs. Published price 21s., postage 6d. extra. Walter King, Ltd., 11, Bolt Court, Fleet Street, E.C. 4. Orders can be booked at the Fair.

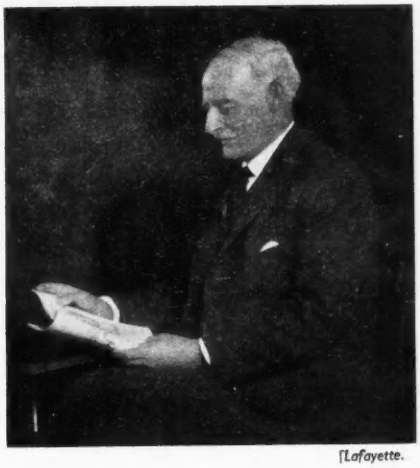
Obituary

PROFESSOR ARTHUR SMITHELLS.

Professor Arthur Smithells, C.M.G., D.Sc., F.R.S., Director of the Salters' Institute of Industrial Chemistry from 1923 to 1937, and Emeritus Professor in the University of Leeds, died on Wednesday last at the age of 78.

Professor Smithells, who was intimately associated with the Gas Industry over a long period of years, was a man of great charm and high intellectual attainment, and he was loved and admired by all his students.

The Gas Industry will miss a loyal friend of enlightened mind, a man who did more than many others to bridge the gap between the academic and the industrial—or, rather, commercial—mind. A man who perceived so clearly how theory and "practice" must coalesce, he lived to see not only in the Gas Industry, but in many other industries, the fruits of his wise and unswerving teaching of the doctrine of co-operation between pure science on the one hand and hard commerce on the other. A man of the kindliest disposition, he endeared himself to all with whom he came in contact. To be a brilliant research worker and at the same time a true teacher is a rare combination. Smithells was a



[*Lafayette.*

man who inspired, understood, and encouraged the turbulent and often truculent young mind. Not the least of his elements of human understanding was his tolerance. We know that not a few of the students at Leeds University will remember with gratitude his sympathy and his help.

In the following notes on a very distinguished career we have drawn liberally from an admirable memoir published in *The Times*.

Arthur Smithells' early training was at Owens College, Manchester, when he came under the influence of Sir Henry Roscoe at a time when a start was being made to give chemical science that place in the colleges of the North which was then in practice denied to it at the older universities. A supplementary course at Munich and Heidelberg brought him into touch with Bunsen in the atmosphere of research which was already invigorating the German universities. At the age of 25, after a short term as Assistant Lecturer at Owens College, he was appointed Professor of Chemistry in the Yorkshire College, Leeds, where he developed his own department and began his research work on Flame. Actually he was a Professor at Leeds for the long span from 1885 to 1923. In 1901 he was elected a Fellow of the Royal Society, on the Council of which he served in later years. He was a brilliant lecturer, with great experimental skill, and in 1907 was President of the Chemical Section of the British Association.

Administrative duties, however, diverted him from research. When each of the three colleges of Manchester, Liverpool, and Leeds, which had formed the Victoria University, was raised to the rank of a separate university, Smithells, Pro-Vice-Chancellor for many critical years, played a great part in shaping the policy and the constitution of the University of Leeds. He was the principal liaison officer between the academic and the practical, inside and outside the University, although, as he always insisted, it was a collective effort in which academic colleagues and industrial leaders were effectively associated.

And now we come to his connexion with the Gas Industry—a connexion which arose partly out of his work on Flame. He became President of the Society of British Gas Industries in 1911. The Gas Industry was then ripe for emergence from the empirical to the scientific, and it was due largely to his encouragement that the Industry decided, as a memorial to Sir George Livesey, to endow a Livesey Professorship of Coal Gas and Fuel Industries in the University of Leeds. He was an Honorary Member of The Institution of Gas Engineers.

His conviction that the Universities ought to bring their science into the closest possible relationship with human activities was not confined to Leeds, as was shown by his becoming Honorary Education Advisor on Home Science and Household Economics to King's College, London, in 1907, although it was many years later that that subject in the University of London was recognized by degree status.

During the War Professor Smithells was early at work as a visiting lecturer to the camps of the Northern Command, and was later brought to London as Chief Chemical Adviser for Anti-Gas Training of the Home Forces, in which position he attained the rank of Lieutenant-Colonel and was later made a C.M.G. In 1923 he resigned his chair at Leeds and was appointed an Honorary D.Sc. by both Leeds and Manchester. His new post was that of Director of the Salters' Institute of Industrial Chemistry. Its main duty was that of finding young scientific men of promise who might, as holders of the Fellowships of the Institute, with further scientific and technical training, be fitted for responsible positions in the chemical industries. No work could have been more congenial to him, and no one could have been found better qualified to carry it out. It brought him to live in London, and, together with a particularly happy home life, continued his association with the worlds of science and industry. It was in this period that he occupied the Presidential chair of the Institute of Chemistry from 1927 to 1930. In 1935 he was Harrison Lecturer.

APPRECIATIONS

From Thomas Hardie

By the death of Professor Arthur Smithells the Gas Industry has lost a staunch supporter and a distinguished representative. In spite of his many important and diverse interests he was always ready to give time to any matter affecting the Industry.

I knew him mostly through his work on the Joint Research Committee of The Institution of Gas Engineers and the University of Leeds. This Committee was formed in 1910, as the Gas Heating Research Committee, and Professor Smithells, who had been elected in 1907 an Honorary Member of the Institution, was its first Chairman. At that time the number of scientific men engaged in the Gas Industry was very limited, and the Committee was established to meet a need, which was then very noticeable, for a more scientific treatment of the problems that were constantly arising in both the manufacture and the use of gas.

Professor Smithells proved an ideal Chairman. The success of the work of the Committee and the confidence that was felt in its Chairman showed the Gas Industry generally what the advantages were that could be obtained from the application of scientific knowledge to its problems, and resulted in a large expansion by many undertakings in their chemical staff and in their own research work.

The work then done formed the foundation of the forward movement in the manufacture and more efficient use of gas which has enabled the Industry to meet successfully the competition with which it has been faced in later years.

The Gas Industry is further indebted to Professor Smithells for the report he prepared in conjunction with Sir Dugald Clerk and Professor John W. Cobb, which showed the high efficiency of gas production, and the value of the carbonization process in the national economy of coal.

In very many ways he gave the Gas Industry valuable assistance, but many of us value almost as much the privilege of having met and known him. He was always outstanding, whether it was at a scientific meeting, in the smoke room, or as an after-dinner speaker. He was so charming in his manner, so eloquent and impressive in his speech, so kindly in his interest, so gentle in his admonitions, that, no matter the occasion, he was always many times welcome, not only for his sound advice and valuable assistance, but for his personal charm.

From Professor J. W. Cobb.

During the last few days following upon the death of my old teacher, colleague, and friend, Professor Smithells, it has been brought home to me more vividly than ever before how many were his points of contact with humanity and how widely his loss will be felt. In a long life he had spent himself generously in many causes which inspired his sympathy, and his distinction of figure, speech, or writing, combined with an ever-present soundness of judgment and accumulated experience, enabled him to

render service of rare value wherever his aid had been enlisted or his pioneering spirit had been aroused. His connexion with the Gas Industry will form in itself an admirable illustration of what has just been said about him.

As Professor of Chemistry in the University of Leeds he chose the interesting phenomena exhibited by flames as the subject of his research activities and brought to bear upon them a keenly analytical mind and remarkable experimental ingenuity and skill. This won him recognition in the scientific community such as was indicated by his election to the Fellowship of the Royal Society and the Presidency of the Chemical Section of the British Association. But he was at the same time playing a very prominent part in securing the independent position of the University of Leeds and particularly its unique character in relation to training and research in chemical science as applied to industry. He was convinced that such scientific work as his own could be of real usefulness to the Gas Industry if only its confidence could be won, and he set himself to win it. We all know how that by no means simple task was carried through. His lectures and demonstrations were sufficient in themselves to arouse interest and suggest possibilities, but added to that was the power he exercised of securing by his gifts of friendliness, enthusiasm, personal magnetism, and absence of self-seeking, the trust of both the leaders and the general body of the Gas Industry, and not only the members of the Institution but those concerned with the manufacture of gas appliances to which his own work was plainly applicable.

The institution of the Livesey Professorship in commemoration of one who had become his friend, the formation of the Joint Research Committee of the Institution and the University of Leeds, and his election as President of the Society of British Gas Industries marked unmistakably the success of his efforts and the determination of the Gas Industry to enlist science in its service. In these days when the larger gas companies and manufacturers have their own well-equipped laboratories and scientific staffs, and research association in different industries have been called into being, the association of science and industry is taken for granted, but it is to be remembered how recent is this growth and that what Professor Smithells and the Gas Industry accomplished in that matter was outstanding and successful pioneering. It was in him the triumph of a noble character and the impact of a great personality. Nor did the lapse of time diminish his interest in what had been initiated.

Nobody knows better than myself the keenness of his sustained interest in the affairs of the Gas Industry and his special solicitude for the association which had been formed between that Industry and the University of Leeds—always his first concern. When the Joint Research Committee was formed he was welcomed by all to the Chairmanship, which he retained for a long term of years, and only a few weeks before his death that Committee in the desire to do him special honour had elected him its first Honorary Member.

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As we go to press we learn with regret of the death, at Sydney, N.S.W., on Feb. 14, of Mr. FRANK E. BIRD, Australian Manager of West's Gas Improvement Company, Ltd.

Personal

Mr. C. LEONARD WILSON has been appointed a Director of Wilsons & Mathiesons, Ltd., Leeds (Radiation Ltd.). It will be of interest to mention that he is the son of the late James W. Wilson, who was so well known to members of the Gas Industry, and a grandson of the late Charles C. Wilson, who founded the business of Charles Wilson & Son in the year 1854.

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Subject to the approval of the Salaries and Establishment Committee, the Blackburn Gas Committee propose the substitution of a Domestic Sales and Consumers Service Supervisor for a Publicity Assistant in the Gas Department. It is recommended that Mr. ERIC CULSHAW, at present Publicity Assistant, be appointed to the new post.

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The Motherwell Town Council decided on Feb. 7 to appoint Mr. DAVID GARDNER, Technical Assistant, as Assistant Gas Engineer and Manager.

Letters to the Editor

Maintenance of Water Heaters

SIR,—Many points are raised in connexion with water heating by gas in the Paper presented to the Western Junior Gas Association on Jan. 21 last, not the least of which concerns consumption of gas attributed to sink water heaters installed in the average household.

If these small heaters give an additional gas consumption of approximately 45 therms per annum they are indeed of great value to all gas companies, but it was rightly pointed out that many undertakings are of opinion that this is not in accordance with experience and that, although perhaps a sink heater will use this amount of gas as an appliance, is it not a fact that this is a gross figure, and to obtain the actual advantage to the gas company by installing a sink heater other gas consumption which would take place in any case should be allowed for and deducted from the 45 therms per annum to obtain the net benefit which the gas company gains from sink heater installation? I believe that some large undertakings rate this net benefit as low as 20 therms per annum.

It cannot be denied that the sink heater must find its place in a gas undertaking's line of appliances offered to the public, but in order to "cash in" on this sink heater market the gas undertaking must install a sink heater which in the first place is of low initial cost and which, when it is actually installed, can be kept in first-class service condition with a minimum, or perhaps the right word would be negligible, maintenance cost.

The Paper goes on to describe methods for de-scaling coils and other suggestions for maintaining sink heaters in company with many other larger but similar heaters. While it is true that coils can be de-scaled by the methods suggested, it is, at the best, placing upon the gas undertaking the responsibility for a maintenance operation which is hardly the child's play that one would think it to be on the face of it.

While the type of heater referred to is undoubtedly suitable where the water is "soft" in nature, there are large areas in Great Britain which are served by "hard" water and where the so-called "open" type of appliance is undoubtedly the ideal for installation, particularly as all the objections which were raised against "open" type water heaters years ago have disappeared from the modern "open" type design of both sink and bath heater, which appliances do not entail use of copper and by their unique design provide water which is free from contamination by the products of the gas.

The "open" type as above described is primarily a low cost apparatus and meets the very important question of negligible maintenance cost. It is certain that as time goes on this question of maintenance cost on gas water heaters must become still more important to every gas undertaking, and it is only by this "open" type design of appliance that maintenance can truly be negligible in cost and, what is more, can be undertaken by relatively inexperienced or junior gas employees.

It should also be recognized that the "open" type meter is to a considerable extent self-maintaining in that the flue-ways are washed clean by the flow of water, thus greatly increasing the safety in use of the appliance, especially where, for any reason, the customer refuses to allow maintenance to be carried out.

Another important feature is the truly instantaneous nature of the "open" type hot water supply ensuring a greater overall working efficiency—helping, with a reduced maintenance, to reduce overall cost per therm used.

The Paper has done well to call the attention of the Gas Industry to this very important subject of maintenance of gas water heaters.

Yours, &c.,
EDGAR C. A. BLIAULT,
Director.

National Gas Water Heater Company Ltd.,
South Africa House,
Wembley,
Feb. 13, 1939.

Electricity Charges

SIR,—Those members of your Industry who may have been affected by the action of certain electricity suppliers who towards the end of last year informed consumers that they would no longer be eligible for the favourable commercial two-part tariff unless they used current for purposes other than lighting, will be interested to know that the position has now been altered and that freedom of choice has been restored. Many firms were faced with the alternative of scrapping their equipment for cooking, heating, &c., and substituting electrical apparatus, or retaining that equipment and paying the more onerous flat rates for current.

In many cases this policy, if carried out fully, would have meant considerable expense and in the aggregate would have amounted to a huge sum.

The Electricity Consumers Association took the matter up strenuously with the Minister of Transport and the Electricity Commissioners, and on their behalf Mr. T. Magnay, M.P., raised the question in the House of Commons.

I am glad to be able to inform you that our action has borne fruit, the Supply Company having informed the Commissioners that with the view of removing any ground of complaint they have revised the basis on which the fixed charge under the two-part tariff is assessed so that any commercial consumer can obtain the benefit of this form of contract irrespective of the type and size of his electrical installation.

This Association was in no way concerned whether a consumer used electricity, gas, coal, oil, or other fuel for cooking and heating, but it was gravely concerned that he should have freedom of choice. That freedom is now assured, and we desire to express our thanks to those in your Industry who gave us their support and co-operation in our action.

At the same time the new tariff which has been framed is still disadvantageous in certain respects to some consumers, and should this circumstance operate we suggest that the firms concerned should communicate with us.

Yours, &c.,
H. ROLAND COOPER,
Secretary.

Electricity Consumers Association,
Windsor House,
46, *Victoria Street, S.W.* 1,
Feb. 13, 1939.

Frost Damage to Water Heaters

SIR,—As the contributor of the article in the "JOURNAL" for Feb. 1 on the subject of frost damage to water heaters, may I reply to the letter from Mr. Vernon E. Marshall which you published last week? Mr. Marshall is correct in pointing out that if an attempt is made to pass water in reverse through a bib tap fitted with a loose washer the attempt will be unsuccessful. It is, however, a fact that the Metropolitan Water Board and most other Water Authorities require the washers of hot water taps to be secured in such a way that the washer rotates freely and lifts with the spindle (By-law 31 (*g*)). The British Waterworks Association also state:

> "Valves for water fittings should be pegged so as to rotate freely and lift with the spindle."

In their Model By-law No. 15 (10) the Ministry of Health Model Specification of water pipes and fittings also requires, in Section VII. (2) (iv.), similar fixing of the valve. It is therefore clear that the point mentioned in the second paragraph of Mr. Marshall's letter should not arise.

With regard to the remaining paragraphs, it is tolerably certain that if the expansion pipe was free, water under mains pressure would be discharged through it as well as through the outlet pipe or pipes from the tank, and the discharge of water from the expansion pipe would be audible.

With regard to the last paragraph of the letter, it is not easy to determine whether cold water flows into the hot water tap when the whole of the installation is cold unless an observation is made at the same time at the tank.

Yours, &c.,
"WATER HEATER."

Feb. 14, 1939.

Forthcoming Engagements

February

16.—**B.C.G.A.**—District Meeting in London.
16.—**S.B.G.I.**—Council Meeting, 2.30 p.m.
17.—**B.C.G.A.**—District Meeting at Exeter.
17.—**Southern Association (Western District).**—Commercial Meeting, Rougemont Hotel, Exeter, 2.30 p.m.
18.—**Scottish (Western) Juniors.**—Annual Whist Drive and Dance.
18.—**Wales and Monmouthshire Juniors.**—Meeting at Newport. Paper by R. H. Bone, of Cardiff, "Fires and Fuel of the Future."
20.—**B.C.G.A.**—District Meeting at Cardiff.
20.—**L.C.C.A.**—Finance Committee, 10.45 a.m.; Executive Committee, 11.15 a.m.; Central Committee, 2.30 p.m.
21.—**I.G.E.**—Gas Education Executive Committee, 11 a.m.; Gas Education Committee, 2.30 p.m.
21.—**I.G.E.**—Ad Hoc Committee on Text Books, Gas Industry House, 5 p.m.
22.—**B.C.G.A.**—District Meeting at Newcastle.
22.—**B.C.G.A.**—Annual Meeting of Members in Yorkshire District, to be held at Leeds.
23.—**B.C.G.A.**—District Meeting at Birmingham.
23.—**B.C.G.A.**—Annual Meeting of Members in Scotland, North British Hotel, Edinburgh, 2.30 p.m.
23.—**Southern Association (Eastern District).**—Meeting at Gas Industry House, 2.30 p.m. Discussion on "Payment of Commission to Employees."
23.—**Joint Junior Visit to B.I.F.**
25.—**Scottish Juniors.**—Joint Meeting at Edinburgh. Paper by M. Whittaker, of Robert Dempster & Sons, Ltd., on "Gasholders."
25.—**Yorkshire Juniors.**—Meeting at Barnsley Technical College. Paper by H. K. Lister, of Holmfirth, "Personal Experiences on a Small Gas-Works."
February 28-March 2.—B.G.F. Joint Gas Conference.—B.I.F., Castle Bromwich. (For programme, see "JOURNAL" for Jan. 25, p. 220.)

March

2.—**Midland Juniors.**—Paper by F. N. Tidball, "Structural Principles in the Design of a Waterless Gasholder."
4.—**Manchester and District Juniors.**—Annual Dinner. Paper by E. Bates, "Operation of Intermittent Vertical Chamber Ovens Combined with Coke Dry Cooling Plant."
6.—**L.C.C.A.**—Technical Committee, 11.30 a.m.
7.—**B.C.G.A.**—Executive Committee, 2.30 p.m.
9.—**B.C.G.A.**—Annual Meeting of Members in Eastern District at Cambridge.
9.—**Midland Association.**—Spring General Meeting. Presidential Address of G. C. Pearson.

Newcastle Seeks Support for Coal Appeal

Neighbouring Undertakings Circularized

We learn from a local correspondent that the Newcastle-upon-Tyne and Gateshead Gas Company is circularizing gas undertakings on the North-East Coast with a view to obtaining support in its proposed appeal against the recent decision of the Durham District Committee in its investigation regarding the price of coal. At the enquiry the Newcastle Company, it will be recalled, alleged unfair discrimination in the price of gas coal. The Committee, however, decided against the Company.

Gas for Industrial Heating

Large Installation at Dukinfield

Two of the largest gas-fired furnaces in the world for subjecting to controlled heat treatment 22-ton steel plates and other heavy engineering products up to approximately 40 tons have been installed by Daniel Adamson & Co., Ltd., at their Dukinfield Works as a result of new facilities made available by the United Kingdom Gas Corporation for providing bulk supplies of gas at low cost.

Bulk supplies at an economic rate have been made possible through the linking up of three neighbouring gas undertakings which were recently acquired by the Corporation. These undertakings in effect act as a single producing unit, supplementing one another's supplies. As a combination they are able to fulfil the additional industrial demand as well as the requirements of their own domestic consumers.

Heating and Ventilating Engineers

Annual General Meeting

At the Annual General Meeting of the Institution of Heating and Ventilating Engineers on Feb. 8, held at the Institution of Mechanical Engineers, Storey's Gate, S.W. 1, Mr. R. G. Crittall was elected President for the ensuing year. A Paper was given by Dr. M. Fishenden on "The Use of Thermocouples for Temperature Measurement."

The annual dinner was held on the same evening at the Park Lane Hotel, attended by a large gathering of members and guests. The toast of the Institution was proposed by Mr. W. J. E. Binnie, President of the Institution of Civil Engineers.

Members were delighted at the functions to welcome back their Secretary, Mr. C. C. Ferguson, happily recovered from the accident which was attended by such tragic circumstances at about the date of last year's meeting.

News of the Week

For the Purchase of further cookers, the Walsall Gas Committee are recommending that application for permission to borrow £16,000 be made.

An Increase in the Price of Gas of 3d. per 1,000 cu.ft., that is, 0·64d. per therm, as from April 1 has been decided upon by the Lincoln City Council.

For the Erection of a Benzole Plant, the Birkenhead Gas Committee has decided, subject to the approval of the Finance Committee, to invite tenders.

A Series of Cookery Demonstrations in the Lesser City Hall, Perth, is being staged this week by the Perth Gas Department. The demonstrator is Miss Barbara Cobb, *Diplomée*, N.C.D.S., of the Parkinson Stove Company, Ltd.

A Conjoint Meeting of the Manchester Section of the Society of Chemical Industry, the Chemical Engineering Group, the Institution of Chemical Engineers, the Institute of Fuel, the Coke Oven Managers' Association, the Manchester District Association of Gas Engineers, and the Manchester and District Junior Gas Association will be held at the College of Technology, Sackville Street, Manchester, on Friday, March 3. The meeting will take the form of a symposium on gas purification.

Test Runs of Gas-generator Tractors, states "Russia Today" Press Service, carried out in the Soviet Union at the end of 1938 have proved so successful that the authorities concerned now consider it possible to replace tractors working on liquid fuel by these machines. The production of gas-generator tractors will therefore be increased in 1939. The Stalin Tractor Works at Chelyabinsk and the Orjonikidze Tractor Works at Kharkov are scheduled to turn out this year 10,000 gas-generator tractors—5,000 each

A Well-Attended Meeting of the Derbyshire Branch of the Institute of Quarrying was held on Feb. 11 at the Palace Hotel, Buxton, when a film on Tar Carpets was shown by Mr. W. E. Cone, Technical Adviser to the British Road Tar Association. A running commentary on the film, delivered by Mr. Cone, was much appreciated by the members, and was followed by an interesting discussion. The film and Mr. Cone's commentary were of great interest, showing and explaining the remarkable progress which has been made in this type of road surfacing.

A Gasholder was Inaugurated by the Dalton (North Lancashire) Urban Council recently. It has a capacity of 150,000 cu.ft. The holder, built by Messrs. R. & J. Dempster, Ltd., Manchester, consists of two spiral-guided lifts in a steel tank with 8-in. valves and connexions. Provision is also made by means of a 6-in. valve and connexion for a supply to Askam, which is planned in the near future. Erected on a reinforced concrete foundation, the weight of the new holder and tank is about 2,700 tons. The tank measures 65 ft. in diameter and just over 26 ft. deep and contains 538,700 gallons of water. During 1939 the Urban Council proposes to undertake further new work in connexion with the Gas Undertaking.

That the Price of Gas might have to be raised was recently hinted at broadly by the Chairman of the Rochdale Corporation Gas Committee. This possibility, he explained, was due to the rising price of raw materials and to other increasing expenditure. Coal was costing from £7,000 to £10,000 a year more, and other raw materials as well as wages had added substantially to working expenses. In addition superannuation costs would have to be met.

From the Institution of Civil Engineers we have received a copy of their List of Members, with addresses corrected to Jan. 2, 1939. The contents includes the Past-Presidents, Council, Advisory Committees, Local Associations, Constitution, &c., of the Institution, Honorary Members and other classes of Member, Topographical List of Overseas Members, and Index to Topographical List. There are 458 pages in the List, which is stoutly bound.

Extensions to the Carbonizing Plant are foreshadowed by recommendation of the Loughborough Gas and Electricity Committee. It is proposed to increase the productive capacity of the retort house by the construction of four additional retorts; there is actually accommodation for eight retorts, although at the present time only four would be required. During 1938 there was a considerable increase in the quantity of gas produced, and during December's cold spell the Works were running to capacity.

Recent Developments in the Gas Industry as instanced by the supply and distribution of gas on the grid plan formed the subject of an article by Mr. R. Bruce Ottley (Chairman of the United Kingdom Gas Corporation) in the *Daily Telegraph and Morning Post* Financial and Industrial Review on Monday. Mr. Ottley traced the progress of the Industry from the earliest times and concluded with an interesting statement of the aims of the United Kingdom Gas Corporation in promoting the West Yorkshire Gas Distribution Bill, which, he suggested, may well be a milestone in the Industry's history.

The Fifty-Fourth Annual Issue of "Sell's Directory of Registered Telegraphic Addresses" fully maintains the standard of excellence exhibited by previous volumes. The various sections are arranged to facilitate reference not only to telegraphic addresses but also postal addresses, trade descriptions, and telephone numbers (very helpful for trunk calls) of a vast collection of the principal business houses of Great Britain and Ireland, and the Trade Section classifies some 130,000 names and addresses under 3,700 trade headings. A conspicuous feature of the new edition is a strikingly effective coloured section listing contractors to the Government. The publication is of great importance and value to business men for quick and accurate reference to the best trading concerns in the British Isles. No doubt the official information supplied exclusively to the publishers from the Post Office gives the Directory a status which enables merchants and manufacturers to realize its reliability and efficiency. The price is 45s., from Business Dictionaries, Ltd., 133-137, Fetter Lane, E.C. 4.

Special Order Applications

The following draft Special Order applications, we learn from the Board of Trade, have been laid before both Houses of Parliament for approval by resolution. The Orders are proposed to be made to the Board of Trade under the Gas Undertakings Acts, 1920 to 1934. Briefly the applying undertakings and some of the objects of the Orders sought are as follows:

Cardiff.—To extend the limits within which the Company are authorized to supply gas and to make provisions regarding basic price and differential price in the added limits

Chelmsford.—To make provisions regarding the maximum price to be charged by the Corporation within their inner and outer areas and to amend the Maximum Price section of the Chelmsford Gas (Charges) Order, 1922.

Ross.—To make provisions regarding limits of supply, streets forming boundary of limits of supply, share capital, differential price, and calorific value.

A. G. Sutherland, Ltd.: Representation

Messrs. A. G. Sutherland, Ltd., gas meter makers, announce that they have appointed Mr. John H. Bate as their Sales Representative in the North of England.

NATIONAL GAS ORGANIZATIONS IN SCOTLAND.

The Secretary, Mr. W. R. Drummond, informs us that the address of the Scottish Office, as from Feb. 16, will be

48, West George Street,
Glasgow, C. 2.
Tel. Douglas 5589.

Public Lighting Enquiry at Salisbury

Alleged "Unfairness"

The Salisbury City Council has set up a special committee of enquiry to investigate the circumstances in which a tender for the better lighting of the City's main streets was accepted. Certain suggestions were made at the February monthly meeting of the Council of "unfairness" to the Salisbury Gas Company.

The decision to set up the committee of enquiry was carried by a majority of nine votes to six, the remaining members being either shareholders of the Salisbury Gas Company or the Salisbury Electric Light Company, and thus being unable to take part in the discussion. In accordance with notice of motion, Councillor S. N. Bigwood moved that a special committee of enquiry be appointed to investigate the circumstances in which the tender of the Salisbury Electric Light Company for the better lighting of the streets came to be accepted; to report as to whether the Salisbury Gas Company was invited to tender on the similar terms—viz., the lighting of the A30 and other trunk roads in the City; and that this specially appointed committee be instructed to make a full report to the next meeting of the Council.

The Mayor (Councillor W. C. Bridge) explained that he had been inclined to rule the motion out of order under the standing order debarring the re-opening of a discussion within six months, but he had decided to allow it to proceed because he had felt that the General Purposes Committee would have nothing to hide. It was, however, unusual to move what amounted to a vote of censure on one committee and to set up another committee to investigate that committee's proceedings.

Councillor Bigwood, moving the resolution, said he was going to make, and he hoped prove, three allegations. (1) That the Council were misled with regard to the tender for lighting A30 and other trunk roads. (2) That two tenders for lighting those roads were not received. (3) That, as the tenders were not received, no legal contract could be made under the provisions of the Local Government Act, 1933, and the Council's own standing order No. 49. The Council, he continued, was assured that two alternative and competitive tenders were obtained, whereas, in fact, the Gas Company had been asked in February last year for only preliminary estimates regarding street lighting, and had submitted nothing else. They had no reply until December when they were told that they had lost the tender. The Electric Light Company, on the other hand, were asked to quote on a ten years' contract, no mention of which had been made in the invitation to the Gas Company, who also, he alleged, were given no data upon which to tender. When the Council appointed a deputation to inspect lighting in London they went to see electric lighting only and did not inspect the Great West Road, Westminster, or Pall Mall, which were gas lit.

There were not two tenders for A30 and other trunk roads.

The widespread Continental fame of Mr. Nelville Chamberlain's umbrella is exemplified in the above sketch, reproduced from an advertisement in a recent issue of *Het Gas*, in which Messrs. Glover & Main, Ltd., invite their Dutch friends to visit the British Industries Fair.

Standing order No. 49 required tenders (plural) for any works exceeding £500, and Standing Order 48 said that where a contract exceeded £5,000 it must be advertised for ten days in the Press; he had seen no such advertisement. The contract made with the Electric Light Company was going to exceed £31,680—£10,700 capital and £20,980 maintenance. The contract which the Council had accepted was illegal because there had not been two comparable tenders. Councillor E. L. Cooke seconded the motion.

Alderman Medway, Acting Chairman of the General Purposes Committee, in reply, said that Councillor Bigwood had made a statement that the estimate was £30,000. "Let me tell you that it is £12,000," he said. He said he could assure the Council that the General Purposes Committee had nothing to hide. Estimates were obtained from the Gas Company and the Electricity Company for lighting all trunk roads, and both estimates and figures were laid before the members of the General Purposes Committee. The estimate of the Electric Light Company was 35% cheaper than that of the Gas Company, and the meeting decided in favour of electricity for all classified roads. There were no special circumstances to prevent this extra percentage applying also to the scheme for lighting all class A and B roads. The Council could appoint a committee if they wished, but it could not get any more information than he had given them.

The motion was carried and five members were appointed to constitute the committee.

Smith Meters, Ltd., Annual Dinner

Messrs. Smith Meters, Ltd., Sports and Athletic Club held a very happy and successful Annual Dinner and Dance at Bush House Restaurant on Feb. 11.

Proposing the toast of the Company and Mr. and Mrs. Lewis Smith, Mr. S. E. Cash (Chairman) first referred to the great loss sustained by the death of Mr. Ernest Smith, the late Chairman. It remained a loss to the Industry as well as to each one personally. He went on to say that Mr. Lewis Smith (Managing Director and Secretary) had adopted the mantle of his brother very successfully. Thanks to the staff, Smith Meters were doing well.

Mrs. Lewis Smith, replying to the toast of "The Visitors," referred to the many happy gatherings she had attended. A bouquet from the Club was presented by Miss Vaughan (Mitcham Works).

Other toasts included "The Club" by Mr. Charles, who spoke of the splendid team work which produced many champions and a climb towards top league position. A new ground would be needed very shortly and the Committee were very exercised about a central position. Mr. Jenkins replied for the Committee and Mr. Norman Smith praised their work for the Club and in organizing that gathering. Dancing continued until midnight.

COMPANY MEETINGS

The South Metropolitan Gas Company

The Ordinary General Meeting of the Proprietors of the South Metropolitan Gas Company was held at Southern House, Cannon Street, E,C. 4, on Wednesday, Feb. 8, under the Chairmanship of Mr. FRANK H. JONES, M.Inst.C.E., the President.

The SECRETARY (Mr. F. G. Brewer) read the advertisement convening the meeting, and the seal of the Company was affixed to the Register of Proprietors.

PRESIDENT'S ADDRESS.

The PRESIDENT: Ladies and Gentlemen,—You have had the Report and Accounts in your hands for a week, and, with your permission, I shall take them as read.

The Late Dr. Carpenter.

The Report begins with a reference to the loss which we have suffered during the year by the deaths of Dr. Carpenter and Mr. Gundry, and I know that you will all share their colleagues' profound regret that they are no longer with us. As you will remember, Dr. Carpenter was first taken ill in October, 1936, and, although he made some progress, our hopes of complete recovery were unhappily never fulfilled. To many of you here he was not only a highly esteemed President and colleague: he was also a personal friend or, perhaps I should rather say, father, for his dealings with the employees of the Company were almost paternal, and were in the tradition of all that is best in the relations of employer and employee.

He was naturally shy and averse from any form of publicity, and yet his name was well known far beyond the Company. As a technician he was among the greatest, if not the greatest, that the Gas Industry has seen. He had a genius for enquiry, and he could not rest until the problem was solved. We are often told of discoveries by accident, but I believe that there are few inventions which are not the result of careful and well-directed enquiry. This is certainly true of our Industry. William Murdoch, the centenary of whose death will fall in November, had put himself to a long apprenticeship of mechanical and scientific investigation before he laid the foundations of the Gas Industry in this country, and showed how gas could be used for the common good of the community. Carpenter was of the same pattern. I may recall that he was among the first to appreciate that gas-making is a chemical, as well as a mechanical process, and to him as much as to anyone we owe the fact that the Gas Industry is now an important branch of the chemical industry also.

To his scientific attainments he added the true qualities of an administrator. As the successor in 1908 of Sir George Livesey in the Chairmanship of the Board, he had a great tradition to uphold. How well he upheld it, the Company of which we are all so proud is the best testimony. To mention only a few of the achievements of his administration, the Company and the Industry are indebted to him for that great innovation, the therm method of charge, and for the basic price and dividend system, under which companies supplying more than half the gas supplied by companies in England and Wales are now working. But perhaps the greatest of his activities, and the one by which he himself would most have wished to be remembered was his great devotion to Co-partnership. To it he gave his whole heart, and a very great part of his life.

In November we shall celebrate the Jubilee of Co-partnership in the Gas Industry, for it was on November 6, 1889, that the Board approved a scheme for profit-sharing which Sir George Livesey placed before it. From profit-sharing the scheme has grown into something far wider—that community of interest between shareholders, workmen, and, I would emphasize, consumers, and that spirit of collaboration and mutual trust between management and men which have meant, and do mean, so much to the Company's welfare.

Co-partnership was to Carpenter an article of great faith from which he never swerved. The humanity of its aims—the furtherance of health, friendship, and contentment—held a particular attraction for him; and, in thinking over a suitable memorial to him, the Directors felt that they could not do better than recommend one which would express those human sympathies, and also his interest in the South London that he knew so well. They, therefore propose that the Company should endow a bed in one of the great hospitals of our area; and I am sure that this proposal, the cost of which will be £1,000, will commend itself to you. There is no need for me to ask your permission for that, but I want you all to approve that such a memorial should be made. ["Hear, hear."] For myself and my fellow Directors I need say no more than that we have lost a great leader and a loyal and devoted colleague. The friendship which I had with him for nearly thirty years I shall always value as one of the greatest privileges of my life.

Mr. Gundry was less intimately known to many of you, but in him, too, the Board and the Company have lost a conscientious servant and a loyal friend. He joined us in 1927 on the nomination of the South Suburban Company under the terms of the agreement between Sydenham and the Old Kent Road, and from then until his death two months ago he was most assiduous in his duties—particularly on the legal side of the Company's work. His colleagues will miss his courteous presence, and will share with members of the South Suburban Board their regret at his passing.

I will ask you now to stand in silence for a minute as a mark of respect for the memory of Dr. Carpenter and Mr. Gundry.

More Consumers.

May I now turn to the remaining paragraphs of the Report and the Accounts for the year under review? The Accounts tell, I think, their own story, and I hope you will agree that, especially in view of the international difficulties through which we have passed, the results are satisfactory. After providing for debenture interest and preference dividends, the balance of profit is £218,242, and the Directors recommend the declaration of a final ordinary dividend of 3%, making 5½% for the year at the same rate as for 1937. This leaves £16,945 to be carried forward, which is a little more than was brought in.

Again the Report tells you of an addition to the previous record total of consumers, who now number 443,244—a tribute to the value which the public places on gas. With this addition you may have expected, and hoped for, a corresponding increase in the quantity sold; but may I remind you of some of the circumstances which influenced the sales of gas last year? In 1938 the conditions of weather were so abnormal that I must for a moment dwell on them.

Influence of Abnormal Weather Conditions.

I have mentioned before the greater efficiency and consequent economy of the new appliances which we are installing in such large numbers. I have also referred to the changing social conditions which react on consumption per consumer; but the chief fact remains that temperature is our strongest ally or our strongest competitor, and that the higher the thermometer, the fewer the therms. We have had a great lesson as to this. Last March, for instance, every day of the month was warmer than the corresponding day in 1937. In fact, on two days the temperature rose to 67°—a temperature which holidaymakers in July and August must have envied. The average temperature for the month was no less than 10° above the average for March, 1937. Again, last November the average temperature was 7° above that for the same month in 1937, and on some days it was as much as 24° higher. Such weather may delude flowers and birds into premature activity, but it is not calculated to set the index of a gas meter chasing round. And then, as a final curtain to that capricious year—last year—December suddenly showed us what it could do in the other direction. Unfortunately—if I may use that word—the performance was all too short. At 7 p.m. on Friday, December 16, the temperature

was 50°; at 2 a.m. on the Sunday—31 hours afterwards—the thermometer had fallen 22°. A good many people in this room will know that such a position is not an easy one to meet.

Big Christmas Demands for Fuel.

Gas and coke, I need hardly say, were equal to the occasion. The average daily output of gas during the week which ended on Christmas Eve was over a hundred thousand therms greater than in the previous week, and the daily increases over 1937 rose to as much as 30%. Similarly with coke, the demands on our organization soared overnight. On the Monday morning before Christmas, after only a short taste of frost, no fewer than 4,972 orders were received, against the previous record number of 3,365, that is, orders for coke and "Metro-Coalite" to be delivered, and during the Christmas period nearly 22,000 deliveries were made. When you remember the ice-bound condition of the roads, and the abnormal demand for transport made by other traders, particularly the Post Office, during the Christmas rush; and when I tell you that the number of 28 lb. paper bags of solid fuel sold during that period was over a quarter-of-a-million, you will, I think, realize something of what Christmas meant for our Coke Department. That is in addition to what went out in lorries, carts, &c., and it shows how very convenient that method is to people who live in flats and tenements. I may add that the labours of the Department did not cease on Christmas Day or even Boxing Day, for over 400 deliveries were made on each of those days also. I hope that this remark will not encourage our customers on some similar occasion to postpone their orders to the last minute; but it does, I think, indicate one of the reasons why we are called, and are proud to be called, a public utility service. As for gas, throughout this sudden cold period, and throughout our area, all demands were met and pressures were fully maintained: no one had a cold oven or went without a hot dinner so far as gas was concerned.

I make no apology for giving you all these figures, for I think that you will be interested in them, and will join me in appreciation of the very special efforts made by all departments of the Company, and especially those engaged in shipping, production, and distribution of the gas and coke during that sharp, strenuous period.

Another Aspect of Service.

I have just mentioned one aspect of our public utility service—the readiness and ability to meet all demands made upon it: may I remind you of another? You will probably recall some striking remarks which Mr. Herbert Morrison, the Leader of the London County Council, made a short time ago at a Conference of the British Commercial Gas Association, and which he amplified a few days later in one of the London evening papers. "Every year," he observed, "240 tons of soot fall on every square mile of London. The cost of this rain of dirt in money alone is bad enough. Careful calculations put it at £1 per head—say, £4,000,000 for the L.C.C. area. That is the equivalent of a 1s. 4d. L.C.C. rate. The effect on our health and environment is, perhaps, even more to be deplored. Smoke cuts off the sun. Central London in winter gets only half the sunlight which falls on Kew Gardens. Lack of sun means rickets in children, lowered vitality in adults; and so we must build sunray clinics to undo some of the damage our dirty habits have done."

"Do you imagine," Mr. Morrison added, "that industry is chiefly responsible. Two-thirds, or more, of London's smoke damage is done by smoke from the fires of our own homes."

And then he concluded by referring to the work now being done by the Council, who are, I suppose, the biggest landlords in the world—certainly the biggest in this country. "We are making," he wrote, "careful tests to see how far we can go in the direction of an entirely smokeless fuel system in our houses and flats, what it will cost us and our tenants, and whether it will show them and us the immediate advantages that we hope."

An Optional Two-Part Tariff.

Such were Mr. Morrison's words on a subject which, I am sure, commands the support of all parties. We have taken up, or, I should rather say, have anticipated, Mr. Morrison's lead. A few months ago we introduced an optional two-part method of charge, consisting of a periodic standing charge and a low commodity rate. Our aim is the provision of a complete labour-free and smokeless fuel service at a cost within the means of our consumers as a whole, and not least those whom, I think, Mr. Morrison had especially in mind. I am glad to say that we have met with the most encouraging co-operation from the London County Council and some other progressive landlords, municipal and private, who have agreed to collect the standing charge with the weekly rent, and hand on the money to us. This method, adapted as it is to the normal weekly budgeting of such households, is evidently appreciated by the tenants, and I take this opportunity of acknowledging the help given us by the L.C.C. and the others to whom I referred in our endeavour to play our part in bringing to reality that ideal, a smokeless, and therefore a healthier and happier, city.

Coal Industry and the Price of Gas.

From our own public utility service I pass to another, and the largest of all, although it is not usually included in that term as it is commonly understood—I mean the coal industry. The Report tells you that the further and substantial increase in the cost of coal to be delivered into our works in 1939 has compelled us this year to advance the price of gas by 0·35d. per therm; and I may add that we shall not recover by that advance the full addition to the cost of coal. An increase of price is the last thing which any competitive undertaking desires: in our case, with the statutory restrictions placed on us, and our dividends, it is particularly clear that the interests of our consumers and of ourselves are the same in keeping prices as low as possible.

Parliament in its wisdom has been fit to confirm the coal owners in their virtual monopoly. I have said before, and I repeat here, that the Gas Industry, as it has shown in practical form, has every sympathy with the legitimate claims of the coal industry that capital and labour should be adequately rewarded; it will be recalled that we gave voluntarily 1s. per ton for the benefit of the miners. I deny that we have ever taken advantage of the coal owners or have not paid a fair market price for our coal: on the other hand, the custom of the Gas Industry has presumably been of no small help to the mines in less prosperous times than the present. It may be that prices as a whole were low, and that coal cannot be excluded from the general advance of prices, although, of course, coal is in some ways the prime mover of that advance. But the possession of a monopoly entails also the duty of using it with wise and proper restraint. I hope it will be used in that way.

Historic Bankside.

The seventh paragraph of the Report mentions that last June we disposed of our property at Bankside. There is always a little sadness in parting with an old friend, especially when he has given a long and faithful service; and Bankside was the oldest of the Company's works. In fact, the supply of gas to London south of the Thames began with the construction of the Bankside Works in 1814. In 1821 they were sold to the South London Gas Company, which developed into the Phœnix three years later. The Phœnix was amalgamated with the South Metropolitan in 1880. Bankside has a very honourable history in the Gas Industry; but sentiment has at some time or other to yield to economic facts, and developments at East Greenwich and other works better placed and with better accommodation made the further retention of Bankside unnecessary, and therefore wasteful. The effect of the sale is reflected in the Capital Account.

Another item of the Capital Account to which I should call your attention is the reference to the issue last February of £600,000 3½% Debenture Stock, redeemable at par on August 1, 1968, or at any time between August 1, 1963, and that final redemption date on the Company's giving three months' notice. The stock, for which we obtained a net price of 100½%, was issued under the powers conferred on the Company by the Gas Undertakings Act, 1929, and was in pursuance of a resolution of the proprietors passed on February 10, 1932. The issue, as the Report states, has enabled us to clear a temporary bank loan which was raised for the financing of hire-purchasing transactions.

Air Raid Precautions.

It is a sad comment on modern progress, but it seems that, at least for the present, Air Raid Precautions must be regarded as part of our national life. The Government have indicated that they set considerable value on the maintenance of the public utility services. I need hardly say that the Company will wish to do all it reasonably can to that end, and the whole matter has engaged, and will continue to engage, the attention of the Management. We cannot, of course, be indifferent to the cost, and, as you doubtless know, there have been negotiations between the Government and the public utilities as to the proportion of cost which the State should bear. I am afraid it means the expenditure of a great deal of money. The training and protection of our personnel must be our own responsibility and, in the judgment of your Board, is our first preoccupation which we have willingly undertaken. We are, of course, fully prepared to spend the necessary money on protecting our own people as far as possible; but we do not see that we should be called upon to provide a great amount for the benefit of others.

The Spirit of the Industry.

In this connexion I cannot refrain from paying a tribute to the spirit of steadfastness and calm determination shown by

all grades of employees during the anxious days of last September. I should say that it was an outstanding test of Co-partnership, were it not that I find evidence of the same spirit and of its value wherever I turn in reviewing the year's activities. I can assure you that you have been well served by your employees, and that all have worked hard to place these results before you. I have referred to the special efforts made in the cold spell of December; I may also mention that our ships carried, for their present number, a record tonnage of coal, and that the sales of appliances in our showrooms were a continued advance on 1937. The revenue from chemical products, especially having regard to the state of the international market, is also, I think you will agree, a tribute to the Managers of our Chemical and Tar Works, our Chemists, and our Product Sales staff. But I hesitate to particularize where all have played their part. I should, however, like to acknowledge here the help which I personally have continued to receive from all my colleagues, and not least from the Employee Directors, including the one who retired last November, Mr. J. D. Payne, and his successor, Mr. G. B. Croft, whom we are very glad to welcome to-day.

We know that the strength of our Industry lies in the inherent merits of its processes and of the products that it offers. There is something else—the spirit of those who work in it. I have had more than forty years in the Industry, and every day my faith grows stronger that, heat for heat and convenience for convenience, gas is the most reliable, the most economic and, having regard to its labour saving, the cheapest of all fuels or forms of energy. In fact, I say without hesitation that the prestige of gas has never stood higher than it stands to-day. That is the reason, coupled with the spirit of its workers, why I am confident of the future of our Industry and of our Company.

It is a sad reflection that to-day we have to record the passing of the second great man who has made this Company what it is, and therefore I thought it an occasion for a more or less domestic address. All the figures recording the results of the year's working you will find in the Accounts.

I formally move that "the Report and Accounts now presented be received and adopted and the Report entered on the Minutes," and I will ask the Vice-President to second the resolution.

Mr. A. M. PADDON, M.Inst.C.E. (the Vice-President), formally seconded the resolution.

In response to a suggestion that comparative figures relating to the previous year's working should be inserted in the Accounts for ready reference, the PRESIDENT said this matter had often been in the minds of the Directors, but the balance of opinion was against it. They would, however, consider it again, and, if the Board thought it wise to do it, it would be done. In answer to another question as to whether the £1,000,000 of 5% could not be redeemed now and re-issued at a lower rate of interest, he said that it could not be redeemed until 1950.

The Report and Accounts were then adopted.

The Dividend Resolution.

Proposed by the PRESIDENT, and seconded by the VICE-PRESIDENT, it was agreed:

> That the following dividends be now declared, viz.:—On the 6% Preference Stock a dividend of 3% and on the 4% Preference Stock a dividend of 2% for the half-year ended 31st December, 1938; and on the Ordinary Stock a dividend of 3%, making with the interim dividend of 2½% paid in respect of the first half of the year, a dividend at the rate of 5½% per annum for the year ended 31st December, 1938, and that warrants be transmitted to the registered addresses of the Proprietors by post for the amounts of such dividends.

The retiring Directors (Dr. E. F. Armstrong, F.R.S., and Mr. A. B. Pasmore) were re-elected, on the motion of the PRESIDENT, seconded by Mr. G. B. CROFT; and thereafter the retiring Auditor (Mr. F. J. Bradfield, F.C.I.S.) was re-appointed.

Vote of Thanks.

The PRESIDENT: I have said something, though not enough, about the services of our staff and I now wish to tender to everyone from the top to the bottom in this Company the thanks of the Board and my own personal thanks, and I want you all to join in this expression of appreciation. You have an excellent staff. ["Hear, hear."]

The GENERAL MANAGER (Mr. E. V. Evans, O.B.E., F.I.C.), in acknowledging the vote of thanks, said that encouragement was a great incentive, and on the part of all the employees of the Company he thanked the President and those present for this mark of appreciation. The personnel of a gas undertaking such as theirs consisted, as they were aware, of a great variety of men and women of widely different training and experience; but however wide this difference might be, he could assure the proprietors that all were united in their wish to give always faithful service to the Company and to do their best to see that its reputation, already high, was enhanced. It was a privilege to be attached to this Company, and he used the word "attached" in its double meaning. It was a privilege because each of them felt that he or she had been allotted a job of work which was very well worth the doing. [Applause.]

EXTRAORDINARY GENERAL MEETING.

London Gas Undertakings (Regulations) Bill.

The SECRETARY then read the notice convening an Extraordinary General Meeting for the purpose of considering, and, if thought fit, of approving, a Bill now before Parliament.

The PRESIDENT said: The purpose of this Extraordinary General Meeting, which is called in compliance with the Standing Orders of Parliament, is to place before you, and, as I hope, to obtain your approval of, a Bill which the Company has deposited in association with four other London Companies—the Gas Light and Coke, the Commercial, the Wandsworth and District, and the South Suburban. Its object, to quote its title, is "To provide for the making of regulations with respect to the installation of supplies of gas and of gas-fired appliances to and in premises in the County of London and matters incidental to such installation; and for other purposes."

As you know, we are vitally interested that any installations for the supply of gas or gas appliances in our area should be efficient and satisfactory in the widest sense of those terms. Efficiency includes both economy and safety, and the Company has devoted great pains and spent considerable sums of money in seeing that its staff and method of fitting appliances satisfy the most exacting requirements. Any case of accident or lack of efficiency inevitably reacts on us, although we may have no responsibility for it, and the cause of gas suffers.

The L.C.C., as you know, have important responsibilities with regard to building work in London, and to carry out their duty they are armed with statutory powers, including the power of making by-laws for the proper regulation of the construction of buildings. In so far as these enactments and by-laws relate to safety in connexion with gas supplies, our aim is the same as that of the Council, but we are also concerned with questions of economy and efficiency. Our object is to secure the setting-up of a self-contained code of regulations with regard to the installations of gas supplies and appliances which all concerned must observe. These regulations will deal not only with matters relating to such installations which are dealt with by the existing enactments and by-laws, but also with other important matters which are not within the jurisdiction of the London County Council. We suggest that, on so technical a question as this, the task of preparing the regulations affecting gas supplies and appliances is best entrusted to those who are best qualified on technical grounds, and to those, incidentally, who have much to lose by any flaw or blemish in those regulations—I mean the Gas Companies, who have a reputation to lose as well as long experience to fortify it. I have said "preparing the regulations," for we feel that the regulations when drafted should very properly undergo the scrutiny of a committee with other professional and governmental qualifications, on which the L.C.C. will be represented, and that before becoming operative they should have the sanction of the Board of Trade. Provision for this procedure is made in the Bill.

When the regulations have undergone that scrutiny, and have received the Board's *imprimatur*, we suggest that they should be the recognized requirements to which we and anyone else installing supplies or appliances should conform. We suggest, further, that they should in effect, at any rate to a large extent, take the place of existing enactments and by-laws, which would thus become unnecessary, and, indeed, likely to lead to confusion and duplication of energy and expense.

I think that I have now given you a full summary of the Bill, and that I need not go into further detail about it, except to say that the proposed committee which the Board of Trade would be required to appoint will be thoroughly representative of the various interests concerned, including the L.C.C., authorities on public health and building matters, and the Gas Industry itself.

The VICE-PRESIDENT seconded the resolution, moved by the PRESIDENT, approving the Bill, and it was carried.

Mr. R. V. DE B. CRAWSHAY said that before the meeting separated he would like to propose a hearty vote of thanks to the President and Directors. Some of the greatest men ever connected with the Gas Industry had occupied the Chair of that Company, and they would all appreciate the fact that their present President and other members of the Board were men of very great experience of the Industry, and did all they could to further the interests of this important undertaking.

Mr. FROST seconded the vote, which was carried with applause, and briefly acknowledged by the PRESIDENT.

The Gas Light and Coke Company

The Two Hundred and Thirty-Second Ordinary General Meeting of the Gas Light and Coke Company was held on Friday, Feb. 10, at Gas Industry House, 1, Grosvenor Place, London, S.W. 1—Sir DAVID MILNE-WATSON, Bt., LL.D., D.L., the Governor, presiding.

The SECRETARY (Mr. Brian Wood) having read the notice convening the meeting and the seal having been affixed to the Register of Proprietors,

The GOVERNOR said: Ladies and Gentlemen,—I presume you will as usual take the Reports and Accounts as read. [Agreed.]

The Directorate.

Before coming to the ordinary business of the meeting, I should like to refer to the great loss we have sustained through the death of Mr. Fooks, who had been a Director for eight years. He was previously Chairman of the Grays and Tilbury Gas Company, which was amalgamated with this Company in January, 1930. We have lost in him not only a very able colleague, but a most valued friend, whom we all miss.

The vacancy has been filled by the election of Mr. C. W. L. P. Reed. His experience as a Publisher and in other activities will be of great service to the Company.

I also very much regret to report the death of Mr. Galbraith, who had been Secretary to the Company for twenty years up to the time of his retirement in June, 1937. His loss was greatly deplored by a very large number of friends in the Company.

We will now, if you please, take the accounts. You will notice that all the items throughout the accounts have been shown to the nearest pound. This is an innovation which I am sure you will agree makes for easier reading. On the Capital Account, you will see that we have spent altogether £960,000, £17,000 of which was on land; £96,000 on buildings and machinery; £172,000 on mains and service pipes; £352,000 on meters; and £323,000 on appliances. Against these we have written off £838,000, making a net increase in capital of £122,000. During the year it has not been necessary for the Company to issue any further capital stock.

Revenue Account.

We now come to the Revenue Account. The increased expenditure on coal during the year will be discussed later on in my speech. Various alterations in the headings of expenditure have been made, but the main alteration is in the next group—"Distribution of Gas." This heading has now been reconstructed in order to give a clearer picture of the nature of expenditure incurred in respect of the individual accounts. Maintenance and renewal of mains and service pipes has cost us more by £30,000; and £84,000 was devoted to depreciation and renovation of meters and appliances. Rates and taxes showed an increase of £58,000; Co-partnership is up by £6,000.

On the other side of the Accounts, there was a small decrease in the gross revenue from the sale of gas. Public lighting has brought in more revenue, derived from an increase in the number of public lamps from 52,430 to 53,632 last year. This is a most satisfactory state of affairs in view of the fierce competition we meet in this field. It is really quite a feather in the cap of that particular department. ["Hear, hear."]

The rental of meters shows an increase of £5,000; on appliances and fittings there is, however, a decrease of £44,000. A decrease in appliance rentals from consumers is to be expected owing to the number of appliances which continue to be sold outright in replacement of hired apparatus. Coke and breeze show an increase of £183,000, but tar and tar products are down by £62,000.

Result of Year's Working.

The result of the working of the year is as follows: The balance transferred from the Revenue Account to the Net Revenue Account is £2,066,000, as against £2,050,000 for the previous year. This balance, after allowing for interest on loans for the year, and dividends distributed in respect of the June half-year, leaves a sum of £802,000 out of which to pay dividends for the December half-year. This sum enables the Directors to recommend the usual dividend on the 3½% Redeemable Preference Stock, 1970, the usual dividends on the 4% Consolidated Preference Stock and the 3½% Maximum Stock, and a dividend (unchanged) at the rate of £5 12s.% per annum on the Ordinary Stock. The payment of these dividends, together with the necessary contribution of £20,000 to the Redemption Fund in respect of the half-year ended December last, will absorb £748,000, leaving £54,000 to be carried forward to the credit of the current year's accounts, as against £102,000 carried forward last year. The explanation of the reduction in the carried forward figure is bound up with the question of the price of gas, to which I will refer in a few moments.

The Balance-Sheet.

With regard to the Balance-Sheet, at the suggestion of Sir Nicholas Waterhouse, the Government Auditor appointed by the Board of Trade in succession to Sir George Barnes, and with the approval of your Directors, the Balance-Sheet has been drawn up in order to conform more closely to modern practice the main change being that reserves which are not in the nature of provision for actual liabilities have been separated from "Sundry Creditors, &c.," and shown under the heading "Funds for Equalization of Maintenance and Renewals and for Contingencies." Also, reserves of a specific nature have been deducted from the assets to which they relate.

You will see that at the end of the year we had owing to the bank £700,000. This is largely accounted for by temporary loans made to the South-Eastern Gas Corporation, which are included *per contra* under the heading "Miscellaneous Accounts."

Price of Gas.

Before leaving the accounts, I should like to make it quite clear that the figures for the year under review give only a small indication of the cause necessitating an increase in the price of gas, which will come into effect later this year. There was an increase in the cost of coal, which itself was sufficient to account of the reduction in the carry-forward but the increase was small compared with the very greatly increased cost that we shall have to face under coal contracts coming into force for the most part after the period covered by this account. In fact, at the beginning of this year. The point I am making is that no one need seek an explanation of our increased price in the figures now before you; the 1938 figures may be taken as the last account governed by the contracts made before the passing of the recent Coal Acts. In the 1939 Budget we have to take the full strain of the new contracts. To this matter I now turn.

Increased Cost of Coal.

At the end of the year the Directors found it necessary, with great regret, to announce a forthcoming increase in the price of gas. During the past year the Company has been using coal purchased under contracts dated so long ago as 1935. Since then the price of coal has risen substantially. You will remember that in January, 1936, this Company, in common with other users of coal, voluntarily paid 1s. per ton extra for coal under contracts to enable the collieries to pay higher wages to the miners. This action was approved by the stockholders at the time. These contracts have now run out, and our Company has from now on to bear a very heavily increased cost of coal. We all know the effect of the Coal Mines Act on the price of coal to the community, and I do not propose once more to go into this question. My point is simply this: It is impossible to adopt the policy of allowing the Coal Industry virtually to impose what price increases it thinks fit, and then to complain when the costs of other things directly dependent upon coal rise too. The public has to pay in terms of the price of gas, of electricity, and of a vast range of industrial products in whose manufacture coal is an important factor.

Had it been possible to find some means of off-setting the increased coal prices and sparing the public some part of the burden, no one would have been better pleased than your Directors. But it would be a disservice, not only to the Company, but in the long run—the not very long run—to its consumers also, if the Directors did not face fairly and squarely a great rise in the cost of our main raw material, and take immediate steps to deal with it.

Right Decision of the Directors.

You can imagine that it may be a temptation to put off the evil day, and to meet such an increased cost or part of it, by reducing some essential expenditure such as our provision for the proper maintenance and renewal of plant. But a Company—any Company—which takes that easy way out jeopardizes its own future, and paves the way for a slow decline that is certain, though it may not be outwardly visible. I am convinced that the Directors' decision is the right one, in the interest of the continued efficiency in

our operations and of the extension and ultimate cheapening of the vital service which we provide for the community. We have done our very best to postpone the rise in the price of gas, by making it effective in March.

Before leaving this question of the price of gas, let me put the whole matter in perspective once more by reminding you that our increase means an addition to the gas bill of the average London working-class household of 1½d. a week and of ¾d. a week to the old-age pensioner or anyone in similar circumstances. We have postponed the increase to the last possible moment, and during the recent cold spells the consumers have been getting gas at the old price, although we are paying more for the coal.

Effect of Weather Conditions.

The year that has just closed was, from our point of view, a most extraordinary one. In March, and again in November, temperatures were quite abnormally high, and it brought little consolation to us that we had a cool summer. If we cannot sell gas for heating in the winter, we cannot make up in the summer, when the weather is not cold enough to start gas fires. Abnormal heat, therefore, in the winter-time must mean a reduction in the sales of gas. I am satisfied, from a study of the figures, that, in these temperature conditions, a drop in sales of a little over 1% shows that our business as a whole continues to expand. In support of my view, I may point to the remarkable output figures which were achieved during the blizzard just before Christmas, although the temperature and the conditions were by no means a record, even in comparatively recent years. The figures of gas output broke all records. On five consecutive days we beat our previous record day, and on Wednesday, 21st December, we reached the remarkable peak of 265 million cu.ft., 17 million cu.ft. above our previous record, and by far the largest amount of gas ever supplied in a single day by any undertaking in the world. [Applause.]

I am very gratified to be able to tell you that this severe test, and the extraordinary strain which it imposed on the production and distribution departments of the Company, found the personnel concerned ready and willing to deal with the sudden emergency, and they carried out their duties with a good will.

Modern Appliances.

During the past four or five years we have been extremely busy replacing great numbers of older types of appliances on the district by modern enamelled labour-saving and gas-saving equivalents. That task of replacement is now drawing towards its conclusion. I do not suggest that there are no more black cookers or old fires or water heaters on the district, for there are still quite a number, but only a very small fraction of the figure of five years ago. The net increase in the number of appliances on the district still continues, in spite of the fact that last year we were handicapped, in common with almost every other business in the country, by the uncertainties of the international situation.

The number of cookers, hotplates, and gas-rings on the district increased by over 42,000; fires, radiators, &c., by 23,000; water-heaters by over 45,000; wash-coppers by 16,000; and refrigerators by 11,000. These increases, you will agree, are very satisfactory evidence of the progress of our sales promotion work; but the fact that the great replacement period is nearly over means that we are having to adjust our methods and activities to the new situation.

An increasing public consciousness of the need for smoke abatement, of which I shall speak later, and the rising standard of comfort and convenience expected by the housewife, assisted a little, perhaps, by the present domestic servant shortage, are features which combine to offer us a great opportunity in such fields as water heating and central heating, to say nothing of refrigerators, and modern gas fires and heaters. There is still a very long way to go before we achieve our ideal of supplying every house in London with a labour-saving, smokeless fuel service for all needs.

But we expect to make good progress towards that end during the next few years.

Development of Gas Central Heating.

Perhaps I may give you one or two typical pieces of evidence that this sales programme is not a vague aspiration, but is quite practical, and is indeed already in the early stages of realization. I will select instances from each end of the economic scale. First, the technical development of gas central heating has proceeded rapidly in recent years, and with the coming of special tariffs, enabling gas to compete with other fuels, a considerable number of houses are now centrally heated by gas. Obviously, I cannot give individual details, but there are large numbers of consumers in several famous streets and squares in Mayfair and Belgravia who have been won over to the merits of gas, and the process continues.

New Installations.

Among the particular feathers in our cap which it is possible to mention are new installations for Odhams Press, the *Daily Sketch*, and *Daily Mirror* which, added to those I have told you about in previous years, means that almost the whole of the great newspapers in London are now on our list. In addition, our successes cover such diverse buildings as 10 & 11, Downing Street, Sadlers Wells Theatre, Wembley Stadium, the Stock Exchange, the latest block of flats in Park Lane (Fountain House), the Office of Works building in Kingsway (Victory House), and last, and perhaps most notable of all, the new buildings erected by the Institution of Heating and Ventilating Engineers. The last is a tribute indeed. ["Hear, hear."] We need not look for any better evidence of the intrinsic merits of gas for central heating and central hot water supplies, nor of the great field for development which awaits us, than the fact that a body of specialist experts in the heating of buildings and houses should have selected gas central heating for its own corporate use.

Kensal House Scheme.

Turning to an example of development in a very different field, we have been gratified to notice the spread in various directions of what I may, perhaps, call the Kensal House idea. As you know, Kensal House is in one aspect a demonstration of what we consider to be the ideal fuel service for working-class dwellings. It was opened in the beginning of 1937, and during 1938 we have seen the idea begin to extend. The London County Council have decided to conduct an important experiment on a large scale, based upon the Kensal House scheme, and, in addition, some ten or twelve large private building estates have adopted the Kensal House system practically in its entirety, and estates built by the Borough Councils of Chelsea, Paddington, Stoke Newington, Islington, and Westminster have adopted some of its most important features.

Smoke Abatement.

The question of smoke abatement is one to which I referred last year. I then outlined the coming campaign to make the nation more conscious of the smoke menace and more determined to take whatever steps are practical to abolish it. This campaign has achieved during the twelve months since I spoke to you a success which surpasses our expectations. We have had support from authoritative quarters in all parts of the country and are particularly gratified that the campaign earned the blessing of the Minister of Health himself, Mr. Walter Elliot, and the Leader of the London County Council, Mr. Herbert Morrison, who expressed in the most direct terms the Council's resolve to do whatever it could, both as a great Local Authority and as one of the largest landlords in the country, to clean our skies and our homes.

A little later the First Commissioner of Works, Sir Philip Sassoon, reported to the House of Commons that Whitehall was no longer to be "Blackhall," and that every fireplace in the Government Offices, as well as many of those in the House of Commons itself, were to be smokeless this winter. Smoke abatement is also one of the reasons why the Kensal House idea has been winning so ready an acceptance. Not all the progress to which I have referred has been achieved by the Gas Industry itself. But that matters less than that the good cause of Smoke Abatement should be making such headway. In a smokeless England, gas and its ally, coke, will find all the opportunities they require, and they do not grudge to other fuels, appropriate for special needs and circumstances, a share in the work of keeping England clean.

Growing Importance of Coke.

You are aware that a most important by-product of the Company's manufacturing processes is coke, which plays an increasingly important part in our commercial activities and our finances. The past ten years have seen a very great improvement in the quality and standardization of coke sold, and also in the range and efficiency of coke-burning appliances. This progress is the direct result of technical research and marketing organization carried out under the auspices of the London and Counties Coke Association, a body representing the producers and distributors of coke in the South of England, whose work has been of the utmost value, not merely to its own members but to the consuming public.

As a result the production of coke for sale in the south has increased during this period by nearly 1,000,000 tons, representing some 2,000,000 tons of additional coal carbonized. It is not too much to say that the past decade has seen the establishment upon the London and Southern markets of coke as a first-class fuel, produced and consumed on a large scale, making an outstanding contribution to the cause of smoke abatement and of a cleaner London.

Besides the obvious uses of coke for domestic grates, kitchen boilers, and large-scale central heating and water heating, new and important markets have been developed for special purposes connected with agriculture. Some 200,000 tons of coke are now used for grass-drying, and this total is increasing. Other uses are the heating of orchards as a protection against frosts during the season when the fruit is setting, and warming the soil. In addition, interesting experiments are now under way for the lifting of fog from aerodromes through the use of banks of coke braziers.

London Gas Undertakings (Regulations) Bill.

We shall shortly hold an Extraordinary General Meeting to place before you for your approval a Bill entitled: "The London

Gas Undertakings (Regulations) Bill," which the Company is promoting in association with four other London Companies. Its object is to provide for the making of regulations with respect to the installation of supplies of gas and of gas-fired appliances in premises in the County of London. As you know, we are vitally interested in securing that installations of gas pipes and of gas appliances should be efficient. Efficiency includes both economy and safety, and the Company has devoted great pains and spent considerable sums of money in seeing that its staff and its methods of fitting appliances satisfy the most exacting requirements. Any case of accident or lack of efficiency inevitably reacts on us, although we may not ourselves have carried out the installation concerned, and the cause of gas suffers.

The London County Council, as you know, are charged with the duty of protecting the citizens of London from bad building work, and to carry out their duty they are armed with statutory powers including the power of making by-laws as to the construction of buildings. Our interest in the safety of gas installations is similar to that of the London County Council, in the safety of the buildings in which they are placed. The installation of gas-fired appliances in the County of London is affected in some respects by the London Building Acts and by by-laws recently made by the London County Council under those Acts. These by-laws deal with gas installation, but only incidentally to their main purpose. In relation to gas they are incomplete and difficult of interpretation. We, and the other Companies acting with us, suggest that so technical a matter as the preparaion of regulations affecting the installation of supplies of gas and gas appliances is best entrusted to the Gas Companies, who are the bodies best qualified by their research and practical experience to undertake it.

Provisions of the Bill.

Under the provisions of the Bill, the Companies would accept an obligation to initiate the regulations, which would then be considered by a Committee representative of the various interests concerned such as the London County Council, the Gas Industry, authorities on public health and building matters, &c., who would report to the Board of Trade. The Regulations would become operative on confirmation by the Board of Trade, and would, as respects the matters with which they are to deal, take the place of the existing enactment and by-laws. It would be the duty of the Companies to see that the Regulations are carried out.

A Key Industry.

In times such as these I must not omit to remind you and the public that gas is a key industry for re-armament purposes, and is itself a vital source of munitions. Explosives are dependent upon a supply of toluene and carbolic acid, both of them by-products of gas manufacture. Among other substances essential in war are disinfectants, fuel oils for the Navy, road tar for military roads, and toluene, as an ingredient for aeroplane fuel, motor spirit for mechanical transport, and sulphate of ammonia for fertilizing. As for the actual work of re-armament proceeding to-day, it is obviously impossible for me to give you details of the many individual processes in which gas plays its part, but I can tell you that our product is doing various irreplaceable jobs in connexion with the manufacture of aircraft, shells, special tools, and electrical equipment.

In connexion with Air Raid Precautions, a scheme has been approved for the work necessary to maintain continuity of supply, including the linking-up with adjacent undertakings. Parts of our works have been lent to the London County Council for use as Auxiliary Fire Stations. Expenditure has been approved (*a*) under the Good Employers' Code of £51,000 to be borne entirely by the Company, and (*b*) of £98,000 under the Maintenance of Supplies (to be submitted to the Government for a 50% grant).

Co-operation with the L.C.C.

Perhaps it may not be out of place if I take this opportunity of offering to the great Public Authority under whose supervision we operate, the London County Council, our warmest congratulations on the Jubilee which it will soon celebrate. Despite one or two problems to which our approach may be different, the relations between the Council and the Gas Light and Coke Company are those of friendship and close co-operation, based, I hope, on mutual respect. The list of matters in which we and they have common interests and concern would possibly surprise you by its length, and over this whole field of day-to-day discussion and co-operation there operates a spirit of practical goodwill, though neither party slackens its zeal for the proper performance of its own function.

In conclusion, the thanks of the Directors are due to all grades in the Company's service for their devotion to duty during the past year.

With this I formally beg leave to move:

> "That this Meeting do agree with and confirm the Report of the Directors and the Auditors' Report and Statement of the Accounts of the Company for the year ending on the 31st December, 1938."

But before putting the Resolution to the Meeting, I shall be happy to hear any remarks which Proprietors may wish to make, and to endeavour to answer any questions they may ask.

The DEPUTY-GOVERNOR (Mr. Henry Woodall, M.Inst.C.E.) formally seconded the motion.

Mr. W. J. LIBERTY, referring to the Capital Account, said he saw that the amount of ordinary stock redeemed during the year was stated as £33,631, making £911,914 in all. Might they assume that when the £1,000,000 figure was reached this redemption provision would cease to operate?

The GOVERNOR: Yes; it will take about three years, depending upon the price of the stock.

The motion for the adoption of the Report and Accounts was then put to the meeting, and carried unanimously.

Dividend Minute.

The SECRETARY then read the Minute of the Court of Directors dated Jan. 27, 1939, recommending Dividends for the past half-year:

> "RESOLVED: That it be recommended to the Ordinary General Meeting of Proprietors to be held on the 10th February next that: i. The Accounts as laid before the Court be be adopted; ii. Dividends as follow for the half-year ending on the 31st day of December, 1938, be declared, viz.:
>
> | | £ s. d. | |
> |---|---|---|
> | On the 4% Consolidated Preference Stock at the rate of | 4 0 0 | per cent. per annum. |
> | On the 3¼% Redeemable Preference Stock, 1970, at the rate of ... ... | 3 15 0 | „ „ |
> | On the 3½% Maximum Stock at the rate of ... ... | 3 10 0 | „ „ |
> | On the Ordinary Stock at the rate of ... ... | 5 12 0 | „ „ |
>
> *All* subject to deduction of Income-Tax.
>
> iii. In accordance with the provisions of Part III. of the Company's Act of 1931, the sum of £20,000 be set aside towards the Redemption Fund."

The recommendation was adopted, on the motion of the GOVERNOR, seconded by the DEPUTY-GOVERNOR.

Election and Thanks.

On the proposition of the GOVERNOR, seconded by the DEPUTY-GOVERNOR, the retiring Directors (Messrs. Robert Martin Holland-Martin, Thomas Hardie, and Christian William Laurence Peel Reed) were re-elected.

Thereafter the Auditors (Messrs. P. H. Ashworth and H. E. Ibbs) were re-appointed, on the motion of Mr. H. L. MANN, seconded by Mr. T. C. CLAXTON.

Mr. F. LOCKET said they had had a most illuminating Address from Sir David Milne-Watson, which gave a very clear picture of what had been accomplished in the past twelve months, and what it was proposed to do in the future. The work done so ably by the Directors could only be done if they had the assistance of a loyal and united staff carrying out the policy of the Board. Co-operation seemed to be the watchword of this great Company. If the Proprietors looked at the Balance-Sheet, they would see what provision had been made for the benefit of the staff and workmen under the Co-partnership Scheme and in other ways. When officers and employees realized that by doing their very best for the undertaking they served they were going to reap their reward on retirement, it must enthuse them in their daily work; and the Proprietors saw what the result of this policy had been. He was sure that all present would join with him in a very hearty vote of thanks to the Governor, Directors, staff, and employees generally, for their services during the past year.

Mr. E. DALTON seconded the vote, which was cordially passed.

The GOVERNOR, in acknowledgment on behalf of himself, his fellow-Directors, and all associated with the Company, said they had been passing through very anxious times, and the anxiety was still present; but they did hope that a better international outlook awaited them. At any rate, all connected with the Company would, he knew, continue to carry on their work to the best of their ability.

WHARNCLIFFE MEETING.

The proceedings at the Ordinary Meeting were followed by an Extraordinary Meeting, at which it was resolved, on the proposition of the GOVERNOR, seconded by the DEPUTY-GOVERNOR:

> "That the Bill now submitted intituled 'The London Gas Undertakings (Regulations) Bill' be, and the same is hereby, approved, subject to such alterations as may be made in the Bill by Parliament and approved of by the Directors."

This was carried unanimously, and the meeting then terminated.

Gas Undertakings' Results

Bath.

The Directors of the Bath Gas Company, in their report for the year 1938, are able to record that, in spite of the mild weather during the year, the output of gas has been well maintained, and the sales in the Company's new areas of Chippenham, Corsham, Melksham, and Frome show very satisfactory increases. The business continues to expand, 1,126 new consumers having been added during the year, while sales of gas appliances have again been very good. The abnormally cold spell just prior to Christmas created an unprecedented demand for gas, all previous records of the Company being broken. The dividend for the year is maintained at 5½%, with a carry-forward of £1,147, a slight reduction as compared with the preceding year. The Revenue Account shows the cost of coal and oil delivered on works to have increased by about £10,000 (with coke receipts only £2,000 up), and there has been an increase of the same amount in the figure for repairs and maintenance of works and plant. The Directors are awaiting the Board of Trade Order to enable the agreement for the purchase of the gas undertaking of the Calne Corporation to be carried out.

Bristol.

At the annual general meeting of the Bristol Gas Company to-morrow (a full report of which will appear in next week's issue of the "JOURNAL"), the Directors will recommend a final dividend on the General Capital Stock at 5% per annum for the half-year to December. This will leave to be carried forward a balance of £107,345, which compares with £103,572 brought in. During 1938 a further record has been created in the demand for gas, for both domestic and industrial purposes, the sales having increased by 1·69% to 4,158 million cu.ft. The number of consumers has risen to 133,191—an increase of 4,013 as compared with 1937, while the number of cookers supplied by the Company has increased to 113,297. During the year the Directors issued £197,380 (nominal) of 4% new debenture stock. Over the twelve months new mains and service pipes and new meters have accounted for capital expenditure of about £42,600, but at the end of the year the Capital Account was in credit to the extent of £219,582.

Commercial.

The Directors of the Commercial Gas Company preface the report which will be submitted at to-morrow's meeting by the expression of their profound regret at the death of their esteemed colleague and former Chairman, Dr. Charles Carpenter, C.B.E. They state that the Revenue Account for the year shows a profit of £120,579, which, together with the balance of £2,133 brought forward from the previous year, makes a total of £122,712. After providing for the payment of the interim dividend on the ordinary stock of 2½%, there remains a balance of £30,831 available. The Directors recommend the payment of a final dividend of 2%, making a total for the year of 4½%, which will necessitate a transfer of £4,668 from the Reserve Fund. For 1937 the ordinary dividend was 5%. To meet requirements, issues of £200,000 of 3¼% redeemable debenture stock and £140,000 of 4% redeemable preference stock were made in April last. There is now a credit on capital account of £155,460. While sales of gas realized some £2,500 less, manufacture (owing to heavier charges for repairs and maintenance) cost over £3,000 more. There were 106,802 meters in use, as compared with 109,344 in 1937. The Company is one of those who are promoting a Bill to regulate the installation of gas supplies and appliances.

Croydon.

The Directors of the Croydon Gas Company, at the annual meeting of the proprietors on Friday of this week (a report of the proceedings at which will be reproduced in the next issue of the "JOURNAL"), will state that the recent extraordinary demand for gas, due to the severe weather conditions, was met satisfactorily. Sales of gas during 1938 show a small increase over those of the previous year, while 2,065 additional consumers have been added—bringing the total number up to 105,380. The dividends for the year are 5% on the maximum dividend stock and 7% on the sliding-scale stock, and after appropriating £14,000 to the Pension Fund and £12,000 to the Renewal Fund there will be a balance of £55,618 to be carried forward to the next account, a few hundred pounds more than was brought in. Capital expenditure during the year amounting to nearly £60,000—mostly under the item of land, buildings, and manufacturing plant, &c.—leaves the Capital Account in credit to the amount of £133,291. The total quantity of gas sold in 1938 was 16,478,118 therms, which compares with 16,422,891 therms in 1937.

Derby.

The Directors of the Derby Gas Light and Coke Company recommend a final dividend of 4½% on the ordinary stock, making 7½% for the year. Sales of gas during the past twelve months totalled 1,961,306,200 cu.ft., and the receipts under this head amounted to £256,984, as compared with £260,787 in 1937. The total receipts on Revenue Account are some £10,000 down, but, on the other hand, there has been a saving of nearly twice as much in expenditure, so that the balance carried to Profit and Loss Account is up from £56,562 to £63,072. The Capital Account is in debit to the extent of £107,377. Under the provisions of the Company's 1930 Order they are authorized to provide sums for the renewal of plant and for meeting special expenses from time to time, and in the 1938 accounts transfers to these funds have been made.

Durham.

The accounts of the City of Durham Gas Company for the past year show an increase of some £400 in receipts from sales of gas, while coal and other manufacturing costs are up by £1,000. The balance carried to Profit and Loss Account is, however, within a few pounds the same as a year ago, at £6,319. Capital expenditure during the year amounted to £9,551, and there is now a small balance at debit of Capital Account of £5,052. Dividends of 5% on the original capital and 3½% on the ordinary capital are to be paid for the half-year to December.

East Hull.

The Revenue Account of the East Hull Gas Company for the year 1938 shows a profit of £17,139, and this, with the balance brought forward, makes an available total of £18,372. The payment of a dividend of 5% per annum on the ordinary stock calls for the transfer of £4,498 from the Reserve Fund. The Directors point out that the reduction in profit has been caused by very heavy increases in the cost of coal, gas oil, and manufacture. They have entered into a contract amounting to £25,800 for the replacement of obsolete retort plant by a further installation of vertical retorts. The amount standing to the credit of the Special Purposes Fund will be used to meet part of the cost of this replacement. During the year 290 additional meters were fixed, making the total number 24,800. The quantity of gas sold was 2,526,668 therms (561,481,800 cu.ft.), a decrease of 3·09% when compared with the sales during 1937. Owing to the increased cost of coal, the Directors were compelled to increase the price of gas as from July 1.

Ipswich.

Notwithstanding the exceptionally mild weather during the greater part of the year the Directors of the Ipswich Gas Light Company report that there has been an increase in the quantity of gas sold by the undertaking, and the accounts show a gain under this head of something over £700. The balance carried to Profit and Loss Account is practically the same as in 1937, at £20,342, and the payment of the dividend of 6½% per annum on the consolidated stock will leave a balance of £27,840 to be carried forward to the next accounts, as compared with £26,104 brought in. The actual quantity of gas sold to private consumers was 4,033,320 therms, and for public lighting and under contracts 25,476 therms.

Oxford.

The experience at Oxford has been the same as in many other places. There has been a small decrease in the quantity of gas sold during the past year, largely owing to the exceptionally mild weather experienced during November and early December, although (the Directors of the Oxford and District Gas Company report) during the cold spell just before Christmas both the daily and weekly output far exceeded anything previously recorded by the Company. The total quantity of gas sold over the twelve months was 5,235,727 therms, which compares with 5,300,560 therms in 1937. The balance carried to Profit and Loss Account is £45,169, as against £47,980 a year ago, and after the payment of the dividend of 10% per annum on the consolidated ordinary stock there will remain to be carried forward the sum of £13,808. In 1937 the amount carried forward was £17,333. There is a debit on Capital Account of £97,968, and an overdraft at bankers amounting to £48,175. New showrooms and offices in St. Aldate's Street, Oxford, will, it is hoped, be ready for occupation about the middle of next month.

Penistone.

In their report for the year 1938 the Directors of the Penistone and District Gas Company state that the quantity of gas sold has been 111,295 therms—a decrease of 1,321 therms, or 1·17%. The dividend on the ordinary shares is 7% for the year, which will

leave £213 to be carried forward. A scheme of modernization has been undertaken, and reconstruction of the works, involving entire replacement of the former retort house and other parts of the plant, was completed during the past year. A sum of £2,600 has been charged to Capital Account, being the amount calculated to represent additional capacity and improvements. After allowances for depreciation the net addition to capital expenditure is £2,353. A year ago the Reconstruction Account stood at £5,209. It has now been reduced by the £2,600 placed to capital, and by a further allocation from the revenue of the past year of £809—leaving a balance to be carried forward of £1,800.

South Suburban.

The report of the Directors of the South Suburban Gas Company to be submitted to the proprietors at the annual meeting to-morrow, Thursday, states that the sales of gas during 1938 show a reduction of about 1¼% when compared with those of the previous year. On the other hand, the demand for gas fittings and appliances continues, and the additional consumers number 3,597. Sales of gas, at a slightly increased price, brought in nearly £20,000 more, and the returns from residual products increased by almost the same amount. On the other side of the Revenue Account, distribution costs figure at nearly £33,000 more, and rates and taxes at some £18,000 more. The balance carried to Net Revenue Account on the present occasion is £215,823, which compares with £211,963 a year ago. A dividend on the ordinary stock of 6% for the year will leave the sum of £27,090 to be carried forward to the next account. A year ago the carry-forward was £21,582. The make of gas in 1938 figures at 28,695,725 therms, including 3,007,995 therms purchased from the South Metropolitan Gas Company. The Company are joining with other Metropolitan Companies in promoting a Bill to regulate the installation of gas supplies and fittings in the County of London. Regret is expressed by the Directors at having to report the death of Dr. Charles Carpenter, who had been a Director for thirty years and Chairman for ten years, and also of Mr. Harold Gundry, who had been on the Board for twenty-three years. Mention is made in the report of the fact that benzole recovery plants have been recently erected, and are now producing benzole at Belvedere and all the manufacturing stations.

Wandsworth.

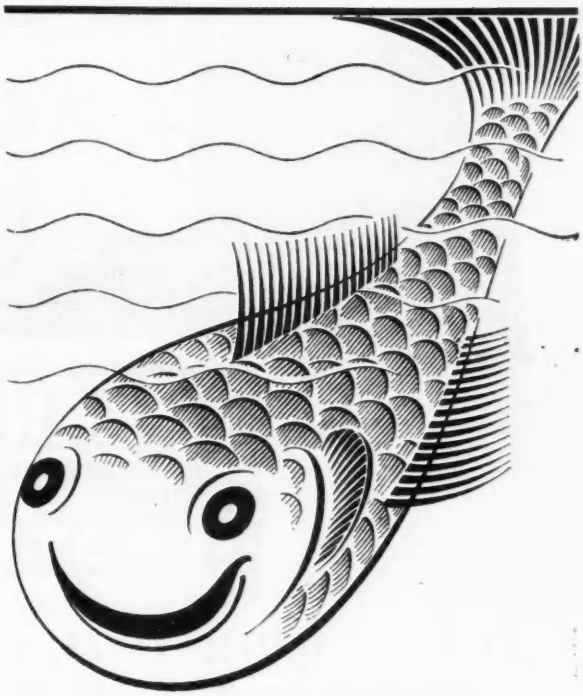
The report submitted at this week's meeting of the Wandsworth and District Gas Company (the proceedings at which will be published in the next issue of the "JOURNAL") records the fact that during 1938 the number of consumers increased by 6,141, while the total sales of stoves and other major appliances in the twelve months were 31,437. The price of gas was increased from the first meter readings after Jan. 1 of this year by 0·4d. per therm throughout all the limits of supply of the Company. The dividend of 7% per annum upon the consolidated stock permits the allocation of the sum of £27,422 to the employee co-partners. The accounts show a trifling decrease of 0·34% in the quantity of gas sold to consumers. In March last an issue was made of £400,000 of 3¼% redeemable debenture stock at £100½%.

Weymouth.

The Directors of the Weymouth Consumers' Gas Company, in their report for the year ended Dec. 31, state that sales of gas again show an increase, the amount sold over the year having been 1,427,683 therms. This, when compared with the preceding year, reveals an increase of 18,151 therms, which is equivalent to 1·3%. An increase in the amount received for residuals is chiefly due to the demand for coke. Out of the sum at credit of Net Revenue Account, the Directors recommend the payment of a dividend on the ordinary stock at the rate of 6% per annum, one-half of which has already been distributed as an interim payment. There is a balance at debit of capital account amounting to £4,143.

Woking.

For the past year an increase of 0·06% in the amount of gas sold to consumers is recorded by the Woking District Gas Company, while the number of consumers shows an increase of 397. An increase in the price of gas of 0·4d. per therm took effect from Jan. 1, 1938. Thus sales realized some £2,000 more. The payment of dividends making 11% for the year on the "A" ordinary stock and £7 14s.% on the "B" ordinary stock leaves an amount of £3,140 to be carried forward to the next accounts, as compared with a carry-forward of £1,682 a year ago. The balance-sheet shows that there is a debit on Capital Account of £10,426, and a temporary loan from bankers amounting to £24,000. A Board of Trade Special Order of May last empowers the Directors to raise additional capital as and when required. The quantity of gas sold by the Company in 1938 was 1,150,709 therms, of which 52,681 therms was purchased. Amounts outstanding on hire-purchase agreements (less reserve) is much the same as a year ago, at £11,691.



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Markets and Manufactures

Current Sales of Gas Products

The London Market

Feb. 13.

There is little of interest to report in the Tar Products market, to-day's values being as under:

Pitch nominal at about 30s. per ton f.o.b.
Creosote, about 3½d. to 3¾d.
Refined tar, 3¾d.
Pure toluole, about 2s. 3d.
Pure benzole, about 1s. 9d.
95/160 solvent naphtha, 1s. 7d. to 1s. 8d.
90/160 pyridine, 10s.
All per gallon naked at makers' works.

The Provinces

Feb. 13.

Crude Gas-Works Tar, 12s. to 17s.

To avoid misunderstanding, it is necessary to state that the above price is not claimed to represent a market value. It is a price worked out from week to week upon a system which has been used for many years as a basis for the fixing of certain contracts for crude tar of varying qualities in different areas.

The average prices of gas-works products during the week were: Pitch—East Coast, 29s. to 30s. f.o.b. West Coast—Manchester, Liverpool, Clyde, 29s. to 30s.* Toluole, naked, North, 1s. 7½d. to 1s. 9d. Coal tar, crude naphtha, in bulk, North, 7½d. to 8¼d. Solvent naphtha, naked, North, 1s. 4½d. to 1s. 5d. Heavy naphtha, North, 1s. 2¼d. to 1s. 3d. Creosote, *ex* works, in bulk, North, liquid and salty, 4d. to 4¼d.; low gravity 4d. to 4¼d. Carbolic acid, 60's, 1s. 7d. to 1s. 10d. Naphthalene, £13 10s. to £16. Salts, 70s. to 75s., bags included. Anthracene, "A" quality, 4½d. to 4¾d. per minimum 40% purely nominal; "B" quality unsaleable. Heavy oil; Unfiltered anthracene oil, min. gr. 1,080, 4¾d. to 4¼d.; filtered anthracene oil, min. gr. 1,080, 5¼d. to 5¾d.; heavy tar oil, gr. less than 1,080, 4¼d. to 4¾d.

* All prices for pitch are now quoted on the basis of f.o.b. In order to arrive at the f.a.s. value at any port it will be necessary to deduct the loading costs and the tolls whatever they may be.

Scotland

GLASGOW, *Feb.* 11.

Prices show no material alteration during the week, although enquiries are, if anything, more numerous. Actual business, however, remains unsatisfactory.

Crude gas-works tar.—Actual value is about 34s. to 35s. per ton *ex* works in bulk.

Pitch of vertical quality is unchanged at 21s. to 22s. per ton f.o.b. for export and round 20s. per ton *ex works* in bulk for home trade.

Refined tar.—Schedules are now being issued for home requirements, with makers' prices fixed at 3¾d. to 4d. per gallon. For export competition is keen at round 2¾d. to 3d. per gallon, both into buyers' packages at makers' works.

Creosote oil.—Market is rather dull with makers' prices as follows: Specification oil, 3¾d. to 4d. per gallon; low gravity, 4¼d. to 4¼d. per gallon; neutral oil, 3¾d. to 4d. per gallon; all ex works in bulk.

Cresylic acid.—With few orders being placed competition remains keen with values about the following: Pale, 97/99%, 1s. 2d. to 1s. 3d. per gallon; dark, 97/99%, 1s. to 1s. 1d. per gallon; pale, 99/100%, 1s. 4d. to 1s. 7d. per gallon; all *ex* works in buyers' packages.

Crude naphtha is maintained at 5½d. to 6d. per gallon *ex* works in bulk, according to quality.

Solvent naphtha.—90/160 grade is 1s. 3½d. to 1s. 4d. per gallon and 90/190 heavy naphtha is round 1s. 1d. to 1s. 1½d. per gallon.

Motor benzole is 1s. 3d. to 1s. 4d. gallon.

Pyridine.—90/160 grade is 8s. 6d. to 9s. 6d. per gallon, and 90/140 grade is 9s. 6d. to 10s. 6d. per gallon.

Benzole Prices

These are considered to be the market prices for benzole at the present time:

	s. d.	s. d.	
Crude benzole..	0 9½	to 0 10	per gall. at works
Motor " ..	1 3	" 1 3½	" " "
90% " ..	1 4	" 1 4½	" " "
Pure " ..	1 8	" 1 8½	" " "

Contracts Advertised To-Day

Gasholder Repairs.
Bala Gas Department. [p. 454.]

Mechanical Shovel.
Stoke-on-Trent Gas Department. [p. 454.]

Portable Conveyor.
Stoke-on-Trent Gas Department. [p. 454.]

Regenerative Furnace.
Marple Gas Department. [p. 454.]

Renovating and Enamelling Black Cookers.
Stoke-on-Trent Gas Department. [p. 454.]

Resetting Retorts.
Rhondda Gas Department. [p. 453.]

Stores.
Spenborough Gas Department. [p. 454.]

Tar Tank.
Bala Gas Department. [p. 454.]

Bilston Capital Issue

The Directors of the Bilston Gas Light and Coke Company are offering for sale by tender 3,530 £5 "B" shares, or such less number as will, with premiums, realize a sum of £30,000. The minimum price of issue is £8 per share. The last day for receipt of tenders is 11 a.m on Feb. 24. Full copies of the Prospectus and Tender Forms can be obtained from the Company's office or from Messrs. Seymour, Pierce, & Co., 6, Lothbury, E.C. 2

I.C.G.A. Announcement

At the request of various stockholders, the Imperial Continental Gas Association has agreed to extend its offer to purchase holdings of its 3½% Debenture Stock, at the price of 100%, until Feb. 28, 1939, when it will be definitely withdrawn.

Dividend Announcement

Tottenham.—At a Meeting of the Board of the Tottenham and District Gas Company, held on Feb. 7, it was decided to recommend the undermentioned final dividends (all less income-tax at 5s. 6d. in the £). Ordinary stock, 3½% actual, making 6¾% for the year; 5% Preference stock, 2½% actual, making 5% for the year; 5½% Preference stock, 2¾% actual, making 5½% for the year; 6% preference stock, 3% actual, making 6% for the year. The Annual Meeting is to be held on Feb. 28.

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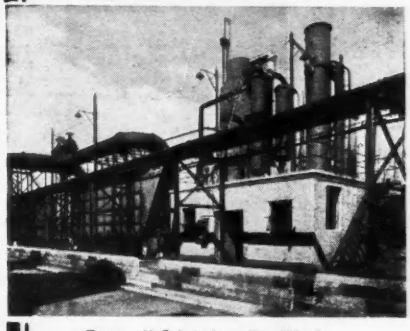
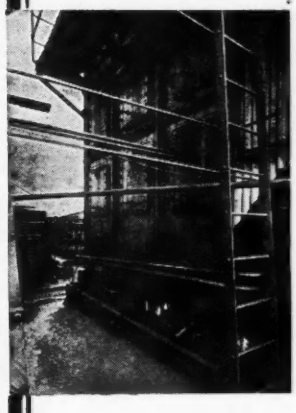


"Permac" Joints in a Gas Works.



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Sole manufacturers:—

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LONDON, E.C. 2

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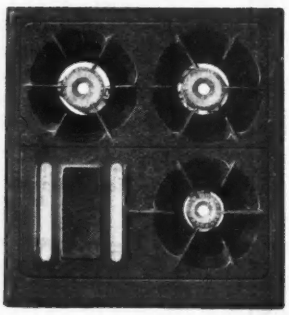
See the MAIN Stand, Ca 404-505, B.I.F., Birmingham

MAIN 57 "CABINET" GAS COOKER

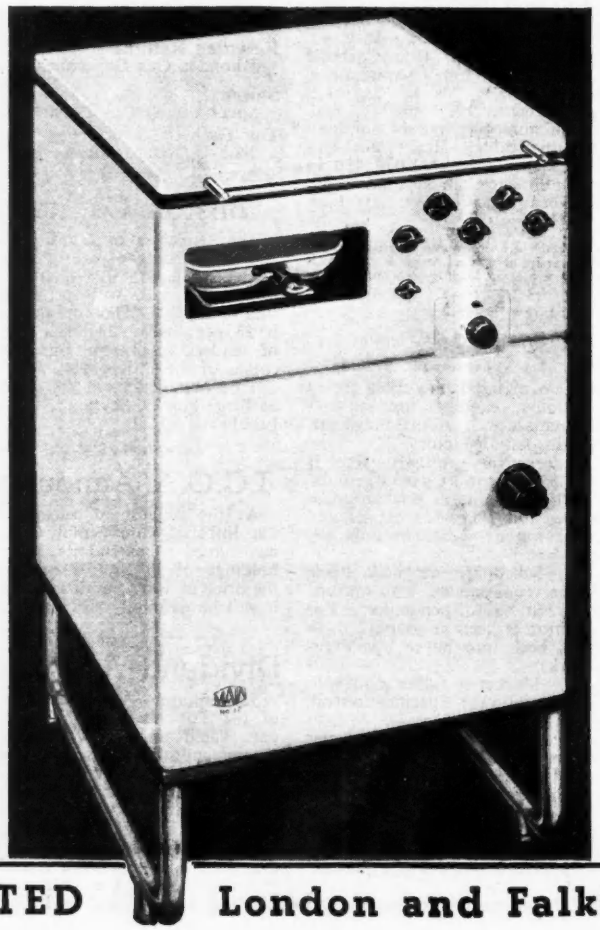
The No. 57 Cooker with Hinged Cover (open), incorporating Chromium Plate Rack. Other alternatives are the standard Chromium Single Plate Rack with Back-Plate, or the Small-Pattern Back-Plate or the "P.R." Hot-Closet.



The Hotplate is a new design with improved boiling burners and griller which establish a new criterion of performance. Bread can be toasted at the rate of one side every 45 seconds. Automatic flash ignition and a governor are provided.

THE No. 57 is a high-grade model of unique design. Perfectly "stream-lined," there is no break in its contour anywhere. The taps are all mounted on a facia plate. No hinges or latch are visible and the door completely covers the width. A deeper oven is provided, and its linings—back as well as side—are removable for easy cleaning. Offset and reversible grid shelves are provided, and there is a special device for controlling the outward swing of the door. Alternative legs are available, as illustrated, with levelling screws to both types.

For further particulars see "The Main Times," a few copies of which are still available, or write for literature for your Showrooms.



R. & A. MAIN LIMITED **London and Falkirk**

The GAS JOURNAL B.I.F. SUPPLEMENT
February 15, 1939

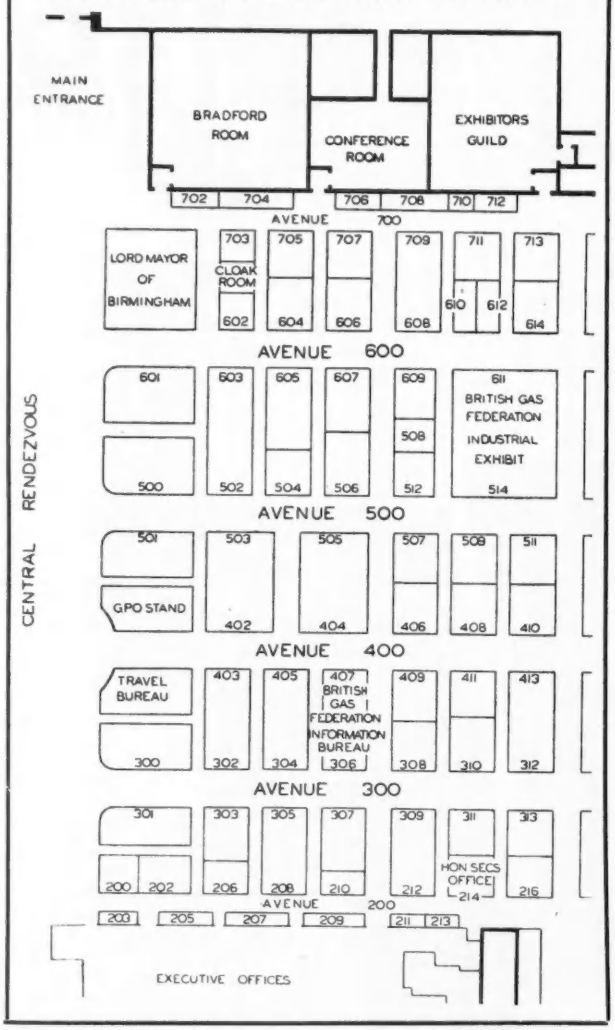
1939

BIF

BRITISH INDUSTRIES FAIR — BIRMINGHAM

February 20 to March 3

PLAN OF GAS INDUSTRY SECTION



Key to the Various Groups

A. Hardware.
B. Building.
Ca. Gas.
Cb. Electricity.
D. Engineering.

Stand Ca. 602

THE "GAS JOURNAL" AND "GAS SALESMAN"

(Walter King, Ltd., 11, Bolt Court, Fleet Street, E.C.4)

Once again the Industry's oldest established Technical Journal will find its place at the B.I.F., where it has supported the Gas Section for so many years.

The "JOURNAL" stand, with its comprehensive display of gas literature, covering every phase of the Industry's activities, will demonstrate the ever-increasing usefulness of a Publishing House whose policy since 1849 has been service to the Gas Industry. It is our sincere wish to be, additionally, of more personal service to those whose business takes them to Castle Bromwich. Whether in search of information or, perhaps, a temporary respite from the rush and bustle of the Fair, visitors will be assured on Stand Ca. 602 of a friendly welcome and every facility which can be provided to assist them.

LIST OF EXHIBITORS

whose displays are described in the following pages

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Bratt Colbran, Ltd.	604	9
Bray, Geo., & Co., Ltd.	409	15
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Gas Plant and Appliances : at Castle Bromwich :

The Gas Industry Section will once again constitute a prominent feature of the Engineering and Hardware Section of the British Industries Fair at Castle Bromwich, being supported by many of the leading manufacturers of gas plant and appliances. In the following pages we give an illustrated account of some of the many interesting things to be seen at the Fair.

BRITISH GAS FEDERATION

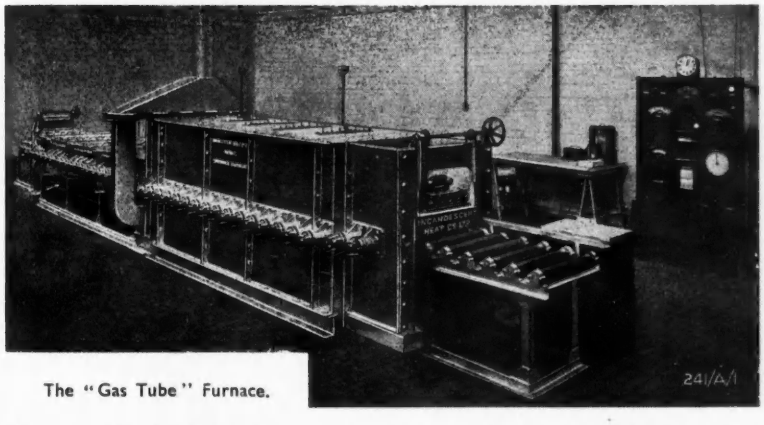
Ca. 306, 407, 514, 611

A full-sized conveyor bright annealing furnace made by the Incandescent Heat Company, Ltd., at work on the B.G.F. Industrial Gas Exhibit is one of the outstanding features of this year's Fair. This stand has a reputation for its interesting working exhibits which have included glass manufacture, flame cutting, die casting, and a special process for hardening high speed steel tools. In the past, however, so many other pieces of gas equipment have been shown as well that there has been little room for really striking display of the "prestige" type. But this year the number of exhibits has been cut down to four, and some really fine display work has been put into the stand.

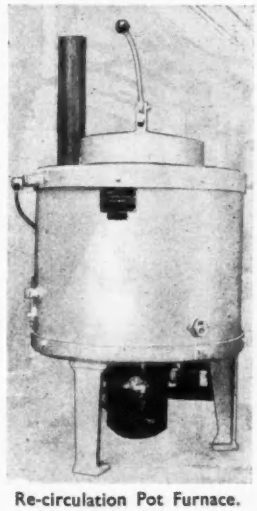
The "Gas Tube" principle of gas firing which is used in the bright annealing exhibit is one which is just being developed and which promises to be of the utmost importance. It takes the place of the muffle system of firing and is used only where the load must be kept separate from the products of combustion. It does not, therefore, affect the use of open-fired gas furnaces which are standard practice for most ordinary heat treatment purposes as well as for forging and billet-heating, and even for clean annealing. The "Gas Tube" or radiant tube is a heat resisting metal tube, in this case about 1½ in. in diameter, inside which the gas and air are burned. The tube becomes incandescent, transmitting heat to the load by radiation and convection without the necessity of heating up an outside combustion chamber and so wasting valuable heat. The inert atmosphere required is supplied from a small unit in which gas is burned and the water vapour and some other constituents then removed from the products of combustion. Alternatively for vitreous enamelling the furnace atmosphere is pure air, or for copper brazing hydrogen may be used if required.

The conveyor gear of the furnace shown is also notable in that the driven rollers which make up the hearth are made of refractory material throughout and therefore need no internal cooling. The results obtained are quite remarkable in quality as well as cost, and visitors are invited to bring their own specimens for test. The furnace is fitted with "Electroflo" automatic temperature control and recording equipment.

Another process which is of growing importance and which has set furnace makers some difficult problems is the medium temperature heat treatment of metals, particularly light alloys for aircraft construction up to, say, 600° C. The permissible temperature variation is very small and recirculation of the furnace atmosphere is essential. A pot furnace of this type made by Brayshaw Furnaces and Tools, Ltd., is shown on the stand. The work is loaded into a wire basket 16 in. deep by 16 in. diameter and lowered into a metal receiver heated on the outside by natural draught burners in an insulating refractory outer casing. The air inside the receiver is recirculated by an impeller projecting through the bottom plate of the furnace. The gas rate is controlled by a bimetallic thermostat, and a two-point recorder with thermocouples at the top and bottom of the basket, made by Elliott Bros., Ltd., registers the exact state of the load.



The "Gas Tube" Furnace.


Re-circulation Pot Furnace.

The more everyday uses of gas are represented by an open-fired "Gibbons" furnace for general heat treatment with an automatic control panel by the Cambridge Instrument Company, Ltd., and by a new recuperative crucible furnace for melting non-ferrous metals made by the Constructional Engineering Company, Ltd. A new Negretti & Zambra gas furnace control panel is also shown for the first time.

There will, of course, be the usual information bureau, and a comprehensive range of literature dealing with the products of practically all the manufacturers who have shown on the stand is available. The exhibit is rendered all the more striking by reason of its artistic murals. Three of the photographically treated panels are lighted from above by switch-operated factory lighting fittings.

WELLINGTON TUBE WORKS, LTD.

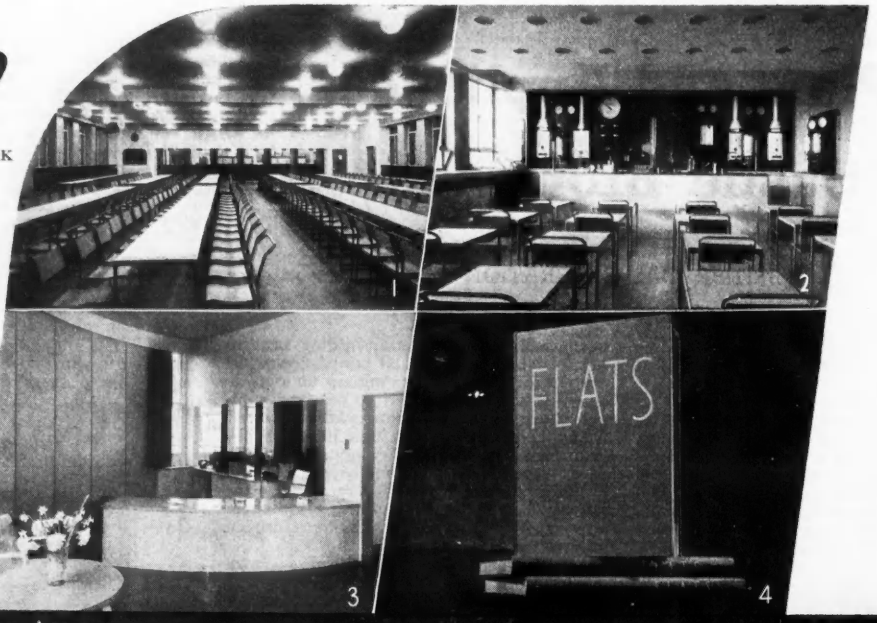
Ca. 300

Displays have been arranged on the stand of Wellington Tube Works, Ltd., of mild steel and wrought iron tubes and fittings for gas, water, steam, &c., special pipework of every description, including fabricated pipework for power plants; loose flanged tubes for compressed air; point rods for railways; pedestrian guard rails and tubes for safety purposes; sign posts; ventilating columns; tubular scaffolding, clothes posts.

The finish on "Wellington" coated and wrapped tubes for gas and water purposes is of a special nature, composed not merely of a dip coating but of one or more impervious fabric coatings. The surface of the coating is covered with a specially prepared compound which is impermeable to water or electrolytic action.

Air heating batteries, manufactured by the Company under the trading style of "Weldex" heaters are also shown, a prominent display consisting of the new range of "Weldex" unit heaters for steam, and low and high-pressure hot water. These heaters are claimed to possess special features in all-welded method and assembly. Samples of the special gilled tube used in their construction are also exhibited. The new "Weldex" gas-fired heater has been redesigned and is being featured again this year under full working conditions. The thermal efficiency of this apparatus is stated to reach a high figure resulting in economical running and the capacity and efficiency have been confirmed by the independent researches of well-known gas undertakings.

ORIGINAL
ASCOT
TRADE MARK



ASCOT

1. ASCOT WORKS CANTEEN. 2. ASCOT INSTRUCTION CENTRE.
3. ASCOT BRANCH OFFICE, BRISTOL. 4. ASCOT PUBLICATION "FLATS."

a few examples chosen at random illustrating our

INTERNAL ACTIVITIES

BIF 1939
BIRMINGHAM
ENGINEERING AND HARDWARE SECTION
20 FEB - 3 MAR
SEE OUR EXHIBIT
STAND No.
Ca 304/405

ASCOT GAS WATER HEATERS LTD

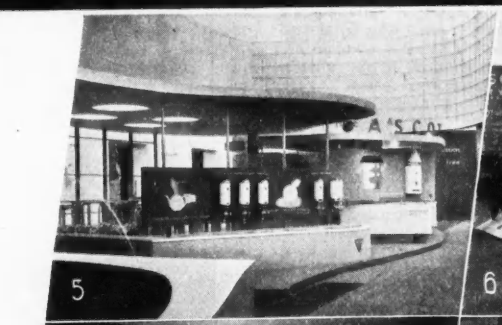
ASCOT HOUSE, 244 HIGH HOLBORN, LONDON, W.C.1

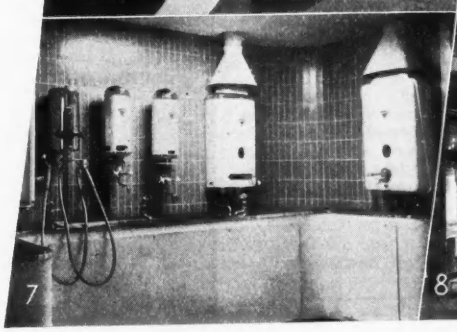
BIF 1939
BIRMINGHAM ENGINEERING AND HARDWARE SECTION 20 FEB - 3 MAR
SEE OUR EXHIBIT
STAND No. Ca 304/405

some pictorial instances of our activities in the EXTERNAL FIELD

5. GAS FAIR. NORTH LONDON.
6. ASCOT SPECIAL WINDOW DISPLAY.
7. SHOWROOM DISPLAY. MILL HILL.
8. ASCOT NEON SIGN IN NOTTINGHAM.

SERVICE





ORIGINAL
ASCOT
TRADE MARK

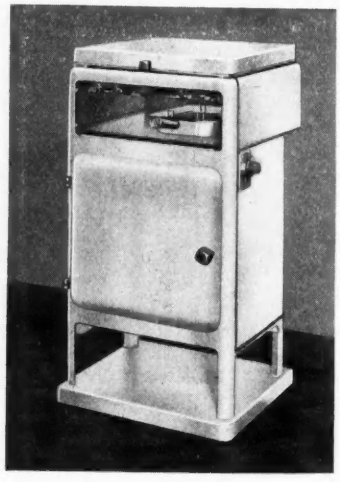
BRANCHES

51 King St., MANCHESTER
99 Corporation St., BIRMINGHAM
43a Queens Road, BRISTOL
35 Above Bar, SOUTHAMPTON
6 Sidney St., CAMBRIDGE
75 Bath St., GLASGOW

FLAVELS of LEAMINGTON

Extend a hearty invitation to all their friends in the Industry to visit Stand

No. CA 406 *at the* B.I.F.

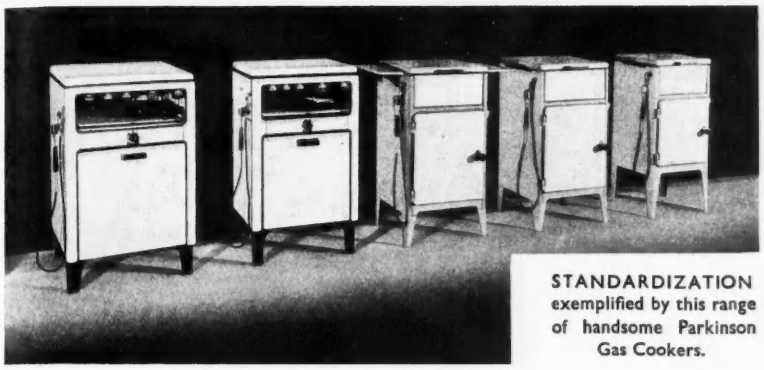


IMPROVED GAS COOKERS FOR 1939

PARKINSON STOVE COMPANY, LTD.

Ca. 500

The exhibit shows how great have been the advances made by the Parkinson Stove Company in the production of modern gas appliances for cooking, heating, and hot water supply for all domestic purposes. The policy of this organization has always been to keep pace with modern times, and in the design of gas cookers enormous strides have been made.



STANDARDIZATION exemplified by this range of handsome Parkinson Gas Cookers.

A complete transformation of the old type of gas cooker with its dust-collecting crevices and external supply pipes has been achieved. The Parkinson "Renown" gas cooker exhibited on this stand has all the attractive appearance of a gleaming white enamelled cabinet; beauty in appearance has been combined with utility and the appearance of the cooker is in complete harmony with modern kitchen interior design. It is only necessary to mention a few of the features of this cooker to show how fortunate the housewife is in having at her command such ideal cooking facilities. The enamelled cover which closes down over the hotplate when the cooker is not in use incorporates a folding plate rack, the hotplate burners may be lit automatically by merely turning on the tap of the burner required, the oven heat is controlled by the Parkinson "Ajusto" regulator, and a positive simmering position is provided in the boiling burner taps. Both the exterior and the oven interior are simplicity itself to keep clean. Two sizes of the Parkinson "Renown" cooker are available to meet varying cooking demands.

The Parkinson "Crown" cookers, also exhibited, are further examples of the new design pioneered by this Company, possessing the same smooth enamelled exterior with an enamelled hood closing down over the hotplate and grilling chamber, designed for the smaller kitchen.

It will be seen that standardization in design now enables this organization to offer a complete range of modern gas cookers suitable to meet requirements of all classes of domestic consumer.

For the kitchen of boarding houses, restaurants, hotels, the Parkinson "Unita" cooker is shown. These cookers are so designed that they present a unit system whereby they may be placed side by side and added to as requirements demand. The variety of heavy duty hotplates available for these cookers provide facilities to meet all circumstances.

The provision of healthy warmth in the home with economy has been given years of careful study by the Parkinson Stove Company, and a variety of modern gas fire and radiators is displayed. These have been specially designed to meet the heating requirements of different rooms. For the dining room and bedroom, the "Super-Ray" series, and for the lounge, where a wide distribution of radiant heat is required to provide warmth for all its occupants, the "Curvex" gas fires are available. The "Super - Ray" series include the "Devron," "Gresham," "Dorchester," and "Howard," and an automatic lighting device is incorporated with high-level control, which obviates the necessity of stooping to switch on the fire. The "Empire" and "Terminal" are outstanding in the "Curvex" series, and a new inset fire which can be easily fitted into any standard fire surround, replacing the coal fire, is also shown. The Parkinson "Panno" and "Welwyn" series of built-in fires to be seen on this stand are perfectly suited to the bedroom. They fit flush into the wall, completely abolishing the chimney breast, and thus allowing more room space.

For the heating of the entrance hall of the home and for shops, stores, offices, and other establishments, the Parkinson "Ubic" reflector radiator is shown. The great difference made is demonstrated by the fact that the heat is reflected in a forward beam of warmth into the room, thus providing rapid heating-up as compared with the old-fashioned radiator.

Parkinson portable gas fires are also included in the exhibits, among which are the "Zonex" and "Zonette," incorporating a special metallic heating element with a directional reflector which makes it possible for a source of cosy warmth to be carried in the home wherever required.

Instantaneous gas water heaters exhibited include Parkinson Type 81 sink water heater, which provides a ready supply of hot water for the kitchen, and the "Elan" geyser for the bathroom. The Parkinson circulator, also shown, may be used either independently or in conjunction with the normal back boiler. For larger establishments, such as boarding houses, the Parkinson multi-point water heater is offered. An impressive technical exhibit brings home to the visitor the extent to which scientific research and test play a vital part, not only in the development of Parkinson gas appliances, but also in the assurance of quality, efficiency, and service.

Numerous tests and demonstrations include such items as the comparison of the heat output of the Parkinson "Ubic" with the old pattern radiator; the effect of flue draughts on burner balance in badly fitted fires; various tests on paints and enamels used in the finish of appliances; and grill efficiency tests.

The "Renown" Cooker.

FORTH AND CLYDE AND SUNNYSIDE IRON COMPANIES, LTD.—Ca. 601

The exhibit of the Forth and Clyde and Sunnyside Iron Companies, Ltd., includes examples of their new "Clyde-Ensign" cooker. This streamlined model is most attractive in appearance, and is made in a range of three sizes sufficient to cover most household requirements. Every up-to-date improvement is embodied in these cookers which are sure to prove very popular. Some older favourites are included in the exhibit, including the "Stella" cooker in a variety of porcelain finishes and an example of their "Regulus" cooker, which is still much in demand for restaurant, boarding house, and larger establishment purposes.

In gas fires the exhibit includes a very comprehensive range of the "Kelburn" and "Lennox" fires. These very modern fires make a most attractive exhibit in the varied range of colours shown. Particular attention must, however, be drawn to the exhibit of the new "C.-R." gas fire. The Company claim for this fire an overall efficiency of about 70%. It really embodies two warming devices in one—viz., a normal hearth type gas fire and an air heater directly warming the air of the room in which it is fitted.

Examples are also shown on the stand of the Forth and Clyde and Sunnyside Iron Company of a new portable gas fire of an original and attractive appearance.

B. I. F.

EVERED

AND COMPANY LIMITED

invite your inspection of a display of

MODERN GAS LIGHTING AND BRASSWORK

STAND No.

Ca 504

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AND COMPANY LIMITED

Gas Lighting Engineers

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at STAND B324

BIRMINGHAM

BRATT COLBRAN, LTD.

Ca. 604

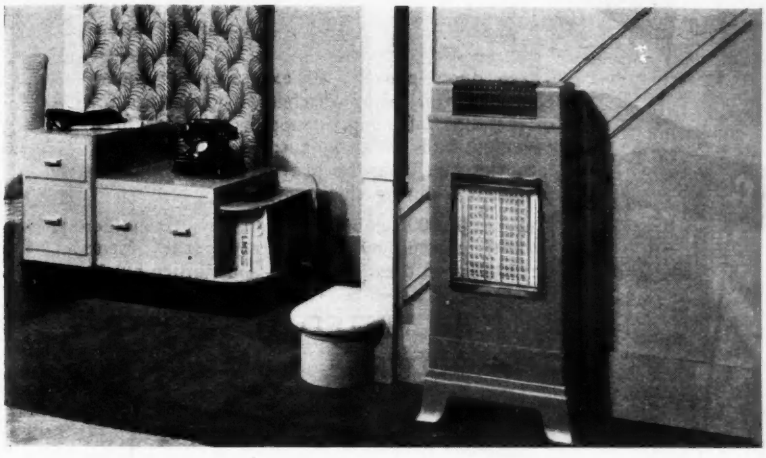
As the producers of the "Portcullis" range of gas appliances, Messrs. Bratt Colbran, Ltd., once again exhibit a comprehensive range of their products, which include several new and noteworthy developments in gas fire technique.

The ready acceptance by the public of the advantages afforded by the "Lancelot" fire, fitted with patent economy brasswork, has necessitated its incorporation in the firm's latest productions—the "Picton," "Sandown Super," "Rayello," and "Wexford" fires.

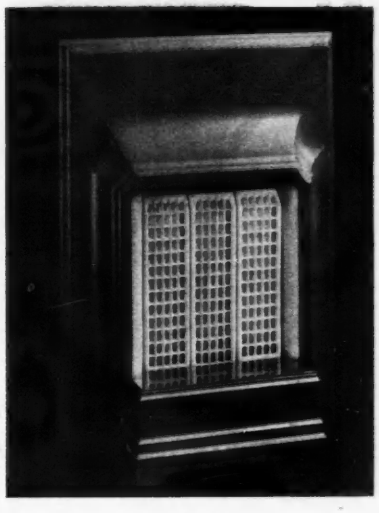
Realizing the importance of distinctive and attractive finish, the existing range of Portcullis "Lustral" colours has been augmented by a number of new and delightful shades, each of which is the result of exhaustive test and specialized selection.

A new development of the "Mortimer" radiator is now available for immediate delivery. Improvements in design have resulted in greater efficiency combined with the added attraction of modern lines. The ever increasing market for portable heaters is being catered for by the introduction of a highly efficient and soundly constructed heater, in one or two unit sizes—the "Portette." The two-unit size possesses the attraction of being fitted with an adaptation of the patent economy brasswork, enabling the gas rate to be reduced without appreciable loss of brilliance to the radiants.

The appliances marketed under the name "Portcullis" overhead radiant heaters have since their introduction merited widespread recognition. Constant research has kept these appliances at a high standard of efficiency resulting in an ever-widening field of application. Three types of this appliance are exhibited under working conditions, while comprehensive literature embodying full technical data is available.



The "Mortimer" Heater in a Modern Setting.



The "Picton" Fire.

WATERLESS GASHOLDER COMPANY, LTD.

Ca. 302, 403

At the Waterless Gasholder Company's stand there is a full-sized section of the tar seal of a "M.A.N." gasholder. Visitors are also enabled to inspect constructional drawings and photographs, and to procure descriptive literature relating to this type of holder, which has achieved such pronounced success throughout the world.

Associated with the Waterless Gasholder Company as Joint Exhibitors are the British Contractors, Messrs. R. & J. Dempster, Ltd., Manchester; Robert Dempster & Sons, Ltd., Elland; Clayton, Son, & Co., Ltd., Leeds; and E. Cockey & Sons, Ltd., Frome, who have been severally responsible for the fabrication and erection of some forty-three "M.A.N." holders in Britain and twelve overseas.

Apart from its widespread use for storage of town gas, the waterless ("M.A.N.") holder has also been adopted for a very wide range of other gases. In particular, the firm claims, it has been virtually standardized in connexion with modern steelworks practice, for blast furnace and coke oven gas storage. For this purpose it has been installed by the Consett Iron Company, Messrs. Stewarts & Lloyds (Corby), Messrs. Richard Thomas & Co. (Redbourn Hill and Ebbw Vale Works), John Lysaght, Ltd. (Scunthorpe), the Broken Hill Propty. Company (New South Wales), and for the new Steel Works in Turkey and India.

GEORGE GLOVER & CO., LTD.

Ca. 509

Messrs. George Glover & Co., Ltd., are again showing a comprehensive range of industrial, domestic, test, and demonstration meters.

The new "Ranelagh" two-coin prepayment mechanism has met with a most encouraging reception throughout the Industry, and sectional demonstration models will be available on the stand. To test the opinion of Gas Engineers generally, the firm is exhibiting and demonstrating a "Ranelagh" time tariff prepayment meter, which permits of a continuous supply of low-priced gas without interruption. In view of the wide interest in two-part tariff schemes, it is felt that this exhibit will provide much food for thought and ought not to be overlooked.

The "Mentor" demonstration meter has been provided with an easy means of price adjustment, while the "Pactotest" series of test meters have been equipped with carrying cases, which make them particularly suitable for the testing of consumers' meters *in situ*.

ASCOT GAS WATER HEATERS, LTD.

Ca. 304, 405

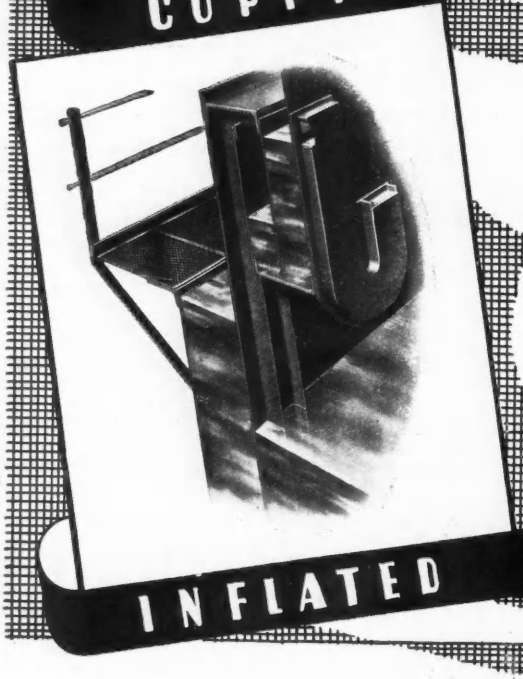
We are unable at the moment to disclose any details of the Ascot display, but the Industry can be certain that this mystery portends yet another striking effort. Their very extensive participation in exhibitions in recent years must have seriously taxed their ingenuity; yet fresh ideas always embodying the latest principles of stand-craft never seem to fail them—to the advantage of the Industry as a whole as well as to the range of single-point and multi-point instantaneous heaters which are featured.

MOXEY CONVEYOR AND TRANSPORTER COMPANY, LTD.

Ca. 704

On the stand of the Moxey Conveyor and Transporter Company, Ltd., are exhibited the latest type "Moxey" balanced reciprocating and conveying screens, together with some new designs for conveyors, elevators, wagon tipplers, mono-rail conveyors, &c., of special interest to gas engineers, coke oven proprietors, iron-ore handling corporations, dock and harbour boards, industrialists, &c. The firm are also showing a patent coke cutter, manufactured by Messrs. C. & W. Walker, Ltd., for which the Moxey Company are the sole distributors. The cutter is of special interest. Its special features are coke cutting efficiency, easy renewal of cutter parts, and longevity.

CUPPING



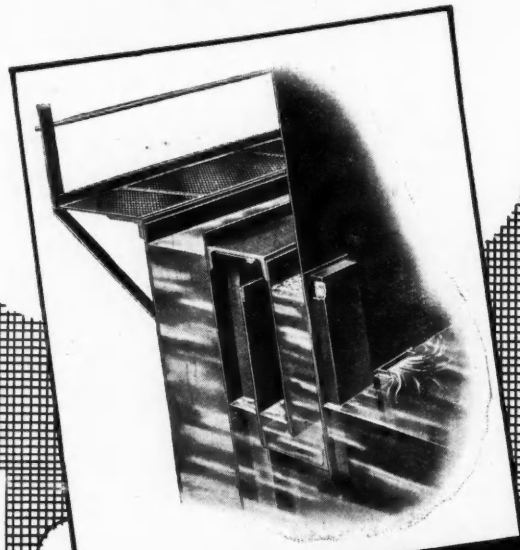
INFLATED

PATENTED OVERFLOW & RETURN DUCTS — prevent external flooding, gas blowing & oil troubles

These ducts prevent all excess water during cupping from being discharged over the top of the dips. During uncupping the working is reversed, and water is automatically returned into the cup, thereby preventing the blowing of the seal during this operation.

The 2,000,000 cubic ft. capacity Gasholder recently erected by us at Sale was the first to be fitted with these Overflow and Return Ducts.

CAN BE FITTED TO EXISTING GASHOLDERS



UNCUPPING

OXLEY
ENGINEERING CO. LTD.
HUNSLET, LEEDS, 10

Telephones: 27468 (3 lines). Telegrams: "OXBROS, LEEDS."

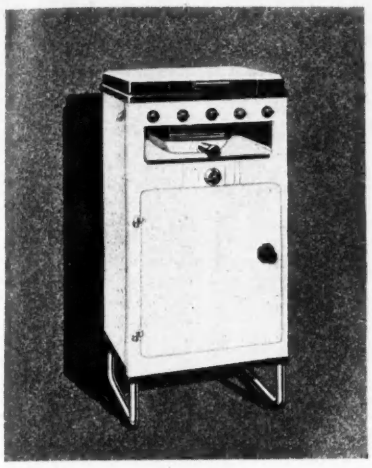
LONDON OFFICE:
Winchester House, Old Broad Street, E.C.2.
Telephone : London Wall 3731.
Telegrams : Asbengro, Stock, London.

B.I.

GENERAL GAS APPLIANCES, LTD.

Ca. 601

The design of the "Major" gas cooker exhibited by General Gas Appliances, Ltd., is not of the extreme streamline type, but is pleasingly modern and ornamental, the black horizontal lines of the cover edge, cornice, and base, and the black oven door



The "Major" Cooker.

knob and gas cock handles contrasting with the whiteness of the enamel of the cover, oven door, front, and sides. The handles of the oven gas cock and "Thermotrol" oven heat regulator are red. Chromium-plated door hinges, and, when selected, chromium-plated tubular legs, add a touch of brightness. The standard finish is black and white, with cast-iron oven interior linings in mottled grey, and the cornice and new semi-solid hotplate bars finished in acid-resisting black enamel.

The "C-R" gas fire is an outstanding example of the considerable progress made in the design of gas fires in recent years. In addition to the usual supply of radiant heat directly available from the glowing radiants, warming of the air in the room is obtained by means of the special construction of the fire. The warmed air is emitted through a chromium grille at the top of the fire. The new designs are pleasing in appearance and harmonize with modern decorative schemes. Three designs are available and may be obtained in a variety of pleasing colours. The fire is fitted with a reliable auto flint lighter, eliminating the use of matches.

The "Portans" portable gas fire is fitted with a highly efficient burner and element whose incandescence is directed forward by a chromium-plated reflector. The unit combines high efficiency with a pleasing appearance. As the gas consumption comes within limits for flueless heaters (10 cu.ft. per hour), this fire is particularly suitable for use anywhere where there is no fireplace. The "Portans" is constructed of sheet steel, finished in a variety of standard colours with ornamentations and safety fret in pearl black porcelain enamel. There are three finishes: Green misted gold, beige misted gold, or bronze.

GIBBONS (DUDLEY), LTD.

Ca. 511

Messrs. Gibbons (Dudley), Ltd., are again showing a full range of their well known refractories, the various types available being sufficiently comprehensive to cover the bulk of industrial needs.

Among the exhibits are 95% silica goods in the form of bricks, segmental gas retorts, and coke oven shapes, the very accurate finish being noteworthy. The "HT-1" brand refractory insulating brick is prominently displayed both in the form of standard bricks and special shapes, and should prove of considerable interest to all furnace users and builders. Leading authorities are of the opinion, the firm state, that the refractory insulating brick will in the next few years replace firebrick in the construction of heat treatment furnaces of all types.

The exhibit is completed by a range of fireclay and aluminous materials, and super refractories made from such materials as silicon carbide, fused alumina, and sillimanite.

THOMAS GLOVER & CO., LTD.

Ca. 404

Messrs. Thomas Glover & Co., Ltd., are exhibiting various types of dry gas meters, prominence being given both to larger sizes as used for industrial purposes and to the smallest sized meters used for gas fires. Compressed air is employed, so that all these meters can be demonstrated under working conditions. There are also on view various appliances such as maximum demand recorders, alternative rate indexes, and the mechanical oiling device which has proved so satisfactory in large meters.

GIBBONS BROS., LTD.

Ca. 511

The main feature of Messrs. Gibbons Bros. stand is a series of illuminated photographs depicting various plants erected by the firm during the past year. This is a departure from their usual practice of exhibiting a working furnace; they feel, however, in view of the wide and varied nature of their activities that this year's arrangement will appeal to a greater section of their customers than a single furnace exhibit could do.

The photographic illustrations include several of the well-known "Gibbons-Kogag" coke oven plants, views of completed ovens and jobs under construction being shown.

Various furnace installations are on view including types for sheet annealing, reheating, malleable annealing, enamelling, &c.

The exhibit is completed by views of the famous Dressler tunnel kilns for firing ceramic ware, &c., horizontal gas retort settings, and constructional steelwork.

SUTHERLAND METER COMPANY, LTD.

Ca. 507

The Sutherland Meter Company have a very interesting exhibit, including open and closed-top meters of both "Du-slot" and ordinary type; a draining meter, which is invaluable for districts with a "wet" gas; clock controllers for street lamps; and other timed appliances.

SIDNEY FLAVEL & CO., LTD.

Ca. 406

The Flavel display consists of a comprehensive range of modern "smoothline" gas cookers, "Radiant-Panel" gas heaters, independent and wall type gas fires, and the popular "Metro" range of gas-ignited coke fires.

A notable cooker is the model "37" Kitchen Grand, in pure white porcelain enamel, also the Flavel "F" series, which can be obtained in new green porcelain enamel with ivory panels, both of which have the unique automatic folding plate rack and lid, which forms a useful porcelain table top when lowered. The "Elf" cooker, compact in design, is arranged to hang upon the wall by means of a special bracket. This cooker has a full capacity oven and the small overall dimensions answer a definite need. An excellent feature of the "Elf" cooker is that the waste products are used to warm plates in chambers on either side of the oven.

Gas fires include an attractive independent model with pressed steel front, and all gas fires are fitted with lighters, so that matches are no longer required. Flueless "Radiant-Panel" gas heaters are designed to suit modern household requirements, being compact in size and unobtrusive in appearance. An attractive range of colours and metal tone finishes is available.

A selection from the "Metro" range of coke fires occupies an important position in the exhibit, and a new type, which is adjustable on site for a wide variety of existing grate openings is included, in addition to a popular basket grate manufactured by the firm.

The Flavel "Elf" Cooker attached to the Kitchen Wall.

BIF BIRMINGHAM

Stand Ca 605

presents

The Streamline

NEWHOME

GAS COOKER

We cordially invite you to inspect the Streamline "NEWHOME" and our comprehensive range of Gas Cooking and Heating Appliances.

SALIENT FEATURES OF THE STREAMLINE "NEWHOME."

- FINISHED IN GREY, WHITE & COLOURED PORCELAIN ENAMEL.
- PATENT SELF-ADJUSTING PLATE RACK OR ADJUSTABLE PLATE SHELF.
- ENAMELLED OVEN RUNNERS & PATENT GRID SHELF STOP STUDS.
- SEMI-SOLID HOTPLATE BARS.
- CONCEALED OVEN DOOR HINGES.
- "AUTOKOOK" PATENT OVEN HEAT CONTROL.

. . . and the well-known

DUEX PATENT *High-Speed* GRILLING AND BOILING BURNER

The DUEX is supplied as standard to the whole range of Cookers and "Argyll" Hotplates. COME AND TEST ITS EFFICIENCY YOURSELF AT OUR STAND!

Also on view is a full range of

COOKERS	HOTPLATES	HEATERS	RADIATORS	FIRES

STOVES Rainhill TRADE MARK **LIMITED**

Stand Ca 605 Birmingham

J. & J. BRADDOCK
Ca. 311

Messrs. J. & J. Braddock are showing several new appliances which are of special interest.

A patent pressure loaded station governor is totally enclosed and controlled by a small mercurial governor. The bell of the governor being made of Monel metal and the internal parts of stainless steel, the inside is rust-proof. There are no floats in the bell to get water logged, so that the governor is always free in action and in perfect balance. Then there is exhibited a new patented "Meteor" gas-heated hot water circulator which has a gas consumption of 25 cu.ft. per hour. This is compact and very neat in appearance. There are several important features incorporated in the design of this circulator, and it can be seen at work on the stand. A new patented automatic relief valve for fitting to the foul main in the retort house is also shown. This valve can be set automatically to relieve the main of any building-up of pressure should the exhauster be stopped through the same cause.

A patent air raid warning device is shown worked by means of a gas pressure wave.

In addition to the above mentioned special new features a demonstration meter may be seen working. This meter has a dial 17 in. diameter boldly marked so that the readings can be seen a good distance from the meter. The fingers of the dial may be set to zero as desired, as they are held on their pivots by friction.

Single tube pressure gauges, geared control quadrant valves, and furnace taps are to be seen. There is shown a test holder, station governor, and retort house governors embodying all the latest improvements in design. The station governor has sufficient seal to withstand pressures up to 20 in. of water, but can be arranged for still higher pressure. The patent retort house governors are fitted with new valves so constructed that high vacuum conditions do not adversely affect the desired conditions in the foul main.

A 5 cu.ft. capacity test holder is also on exhibition constructed in accordance with the latest requirements of the Board of Trade. Large meters as used for industrial gas supplies are on the stand open for inspection. The latest pattern of optional-prepayment mechanism can be demonstrated to visitors.

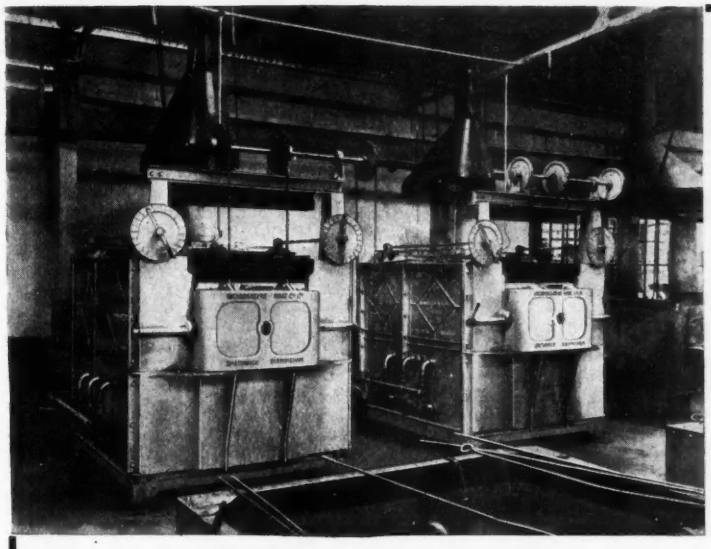
GRANT & WEST, LTD.
Ca. 205

Grant & West, Ltd., are exhibiting the following engineering specialities: "Selek" metal-to-metal jointing material in powder form, which in practice forms a non-oxidizing, non-rusting joint, guaranteed to make, and keep, tight joints under the most exacting conditions. "Tite" jointing compound is mixed ready for use, has great jointing strength, and is clean to handle. It is free from lead, manganese, graphite, &c., and can be used in contact with any fluid, gas, or vapour. "Belfo" belt treatment is for the treatment of all forms of belting, including leather, hair, Balata, cotton, composition, link, &c. "Belfolene" is an electrically-treated castor oil belt treatment; it is a thin, clear liquid, having excellent preservative qualities. "Ropres," a steel wire rope preservative, is specially designed for the treatment of steel wire ropes and cables, used for haulage and kindred conditions. "Plastiloy," a plastic metallic packing, has the advantage that it is a "one-size packing for all-sized rods and glands." "Plasticus" metallic packing, is manufactured in four grades—namely, special, normal, high-pressure, and fine.

"Cretex" waterproofing roofing compound is non-sticky, requires no heating before use, and is guaranteed to make, and keep, tight any slate, tile, corrugated iron, zinc, &c., roof, even under the most severe climatic conditions. "Cretex" is supplied in four colours—viz., black, red, stone, and green—and is supplied mixed ready for use. "Riscor" black varnish is among the most effective anti-corrosive paints yet prepared, is easily applied, ready for use, made from pure bitumen, and a volatile solvent. It contains no pitch or pigments of any kind, and consequently does not require stirring or thinning. "Flinso" tinning compound is a process for tinning and soldering all metals, except aluminium, without previous cleaning and preparation. "Flinso" aluminium solder is made in two grades for soldering aluminium to aluminium, or to other metals. "Revomer" rust solvent is claimed to remove rusted bolts, studs, pipe threads, springs, &c., within a few minutes.

A portable pipe vice-holder—a very handy tool for plumbers, &c.—fits into doorways, and the feet, being rubber-buffered, do not damage the paint work in any way. "Riscor" wood block emulsion is claimed to be an excellent setting emulsion for wood blocks, tiles, linoleum, &c.

The firm are showing a new line this year—namely, a gas carburettor. This has been designed to enable the initial running-in of an engine to be done with gas instead of petrol. The advantages of gas over petrol for this purpose are many, and apart altogether from the question of cheapness, the carburettor is very simple, requires no change of any sort on the engines, except the removal of the ordinary carburettor, and the bolting on of the gas carburettor.



Two "Super" type gas-fired oven furnaces installed for reheating purposes by a well-known firm of automobile manufacturers. Furnaces of this type are ideally suited to all classes of heating and heat treatment operations including carburising, hardening, tempering, annealing, normalising, etc.

CONSULT INCANDESCENT ..at the B.I.F.

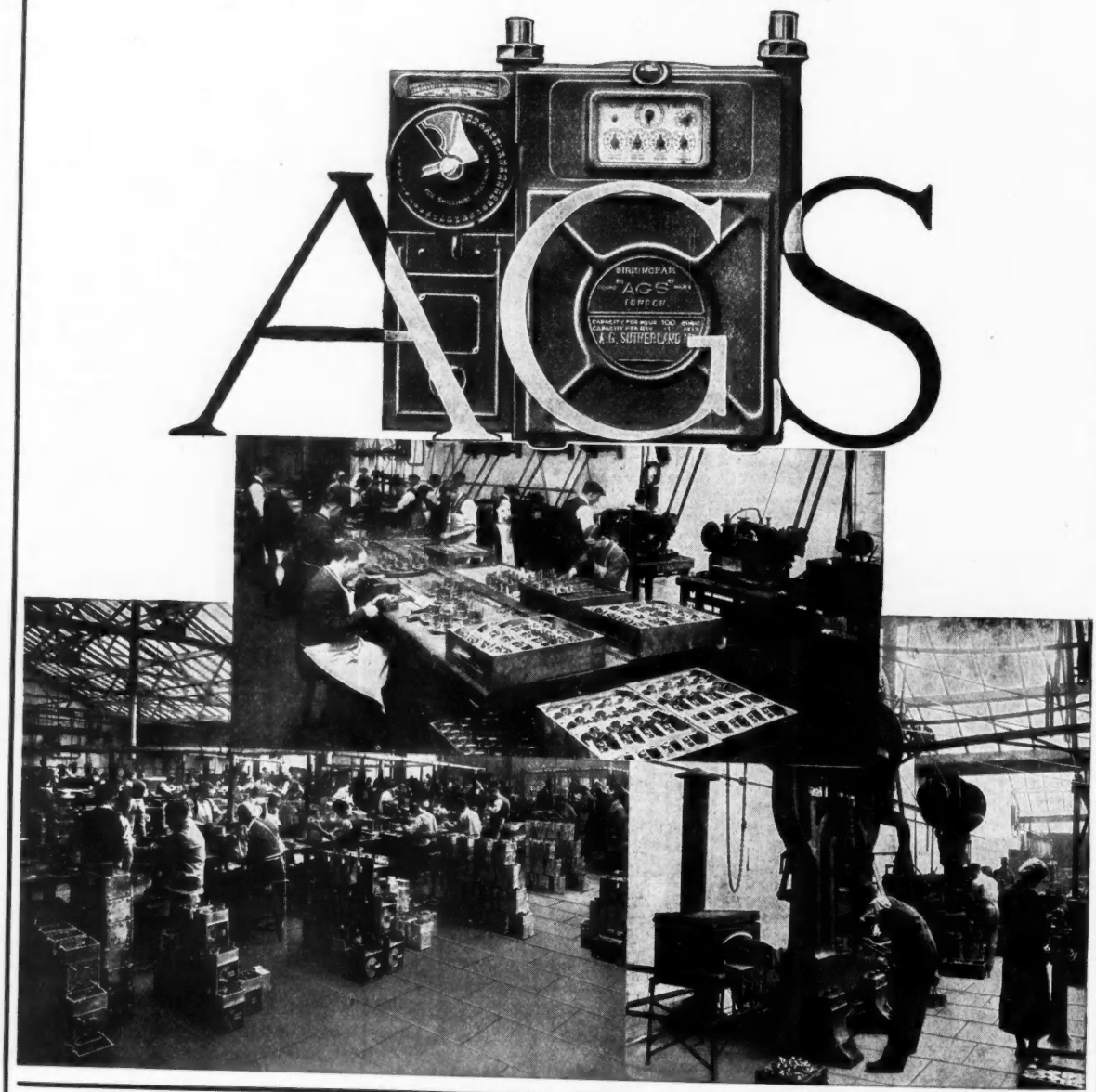
An excellent opportunity to solve your heat treatment problems—our technical experts will be in attendance on our Stand (No. Cb 605 and 504 on the fringe of the Gas Section) to help you—to demonstrate our exhibits and those of our associate companies—to show you that the Incandescent Group can render a complete service in Industrial Heat Engineering.

Write for our new leaflet No. A/G9 featuring the "Super" type gas-fired oven furnaces as those illustrated above.

INCANDESCENT Heat Co. LTD
CORNWALL ROAD • SMETHWICK • BIRMINGHAM •

BRITISH INDUSTRIES FAIR, BIRMINGHAM, STAND No. Ca 308

"AGS" Meters are Outstanding for Quality and Reliability



A. G. SUTHERLAND LTD

WARWICK WORKS,
RIVERSIDE ROAD,
SUMMERSTOWN, S.W. 17.

Warwick Road,
GREET,
BIRMINGHAM, 11.

RYE STREET,
NEW BASFORD,
NOTTINGHAM.

A. G. SUTHERLAND, LTD.

Ca. 308

Messrs. A. G. Sutherland, Ltd., are exhibiting a representative range of their "A.G.S." meters of the ordinary and prepayment types. Sample meters specially prepared to show their internal construction—method of valving, &c.—are on view, and a fully-glazed demonstration meter may be seen at work.

Special prominence is given to the valve plate "lay-out" of their small high-capacity type. In this meter valves of the radial pattern are fitted, and each valve cover reciprocates about one pivotal point only; this eliminates side thrust, ensures absolutely correct valve setting, and reduces friction to a minimum. A double crank is used and the valves placed side by side on one-half of the valve plate in the most suitable position for obtaining straight-through gas ways. This arrangement also facilitates enclosing of the valves should this be desired.

Another feature is the permanently lubricated centre crank bearing; this satisfactorily prevents any tendency of the mechanism to bind, and is of particular value with open top meters. A wide choice of prepayment mechanism is offered—viz., straight single coin attachments, the "A.G.S." convertible two-coin attachment, which can be set by the gas undertaking, to take either pennies or shillings, or the "A.G.S." optional two-coin attachment; one slot takes both pennies and shillings, at the option of the consumer, or by the removal of one screw it can be set to take pennies only or shillings only.

A. G. Sutherland, Ltd., obtained letters patent for their optional attachment in 1931, and the same mechanism is being used today. Sample attachments of each pattern are on view and can be thoroughly examined. The "A.G.S." gas fire meter is also being shown. This is fitted with a special attachment to take either pennies or sixpences, and a key is provided for re-setting the prepayment pointer to zero.

GEORGE BRAY & CO., LTD.

Ca. 409

As in previous years the main feature of this stand is the varied display of incandescent gas burners for domestic and general use. Most of the patterns shown are now very familiar and appreciated throughout the gas lighting industry. There are also some patterns made for special purposes which should arouse attention, and a display of burners specially designed for street lighting will be on view.

In addition to the above, the firm will also show their burners for "Calor Gas," petrol air-gas, and acetylene. The first mentioned is of much interest to rural dwellers, and a number of illuminated "Calor Gas" burners will show what can be done with this gas.

STOURBRIDGE REFRACTORIES COMPANY, LTD.

Ca. 612

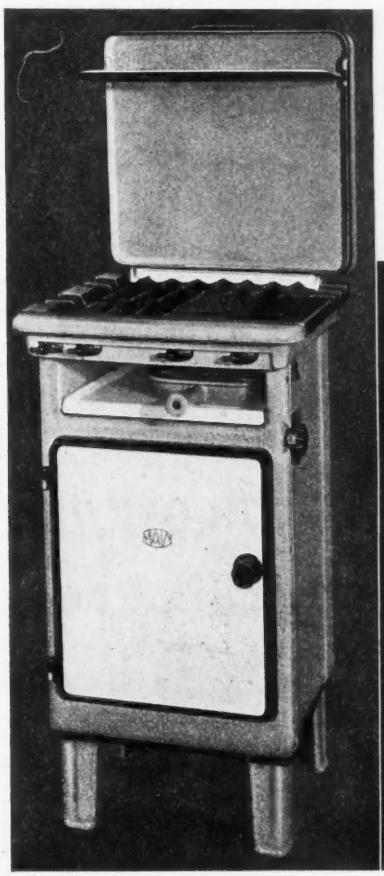
The Stourbridge Refractories Company, Ltd., are showing various samples of high-grade refractory bricks and blocks suitable for withstanding high temperatures in retort settings, coke ovens, iron and steel works, &c. Their chief brands are "S.R.Co." quality for use where a minimum after-contraction is assured, "B" quality for boiler seatings, waste-gas flues, &c., and "PL" quality for producer linings and parts of the furnace where clinker is apt to be detrimental to ordinary quality.

They are also showing a range of special refractory insulating bricks; special hot patching cements both in the dry powdered and plastic form, and samples of jointing mixture for fireclay and silica work.

R. & A. MAIN, LTD.—Ca. 404, 505

On this stand of modern gas appliances entirely new productions in cookers are a feature. There is the "No. 57" cabinet type, a high-grade model without projections, and with the hotplate taps and "Mainstat" control mounted on a façia plate which covers the front between a hotplate and the top of the oven, leaving only an opening for the grill pan. No hinges are visible, and the door, when closed, completely covers the width.

The hotplate is a completely new departure, with a quick-heating high-efficiency griller, and three high-efficiency boiling rings of different consumptions, the largest capable of boiling three pints of water in six minutes. Automatic flash ignition is available to all hotplate burners. The oven has many special features, including offset and reversible grid shelves, and a special device for controlling the outward swing of the door.



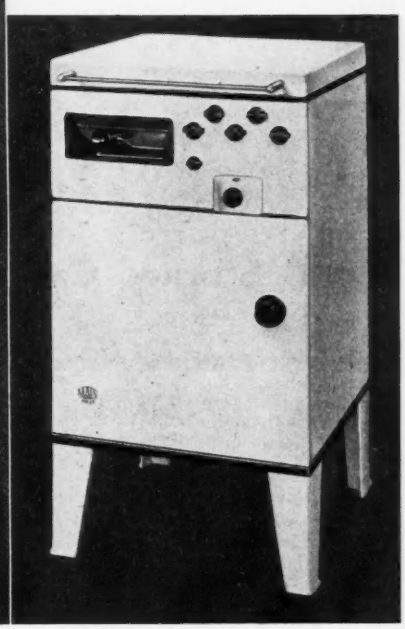
The "57" cooker is provided with a hinged cover which acts as a table top when closed, and as a splashplate when open, and this can be supplied with a plate rack if required, or alternative to the cover, the "Main" standard plate rack with backplate, or the "P.R." hotcloset, are available. The latter can also be fitted to the wall, independent of the cooker.

The "57" cooker can be supplied either with four enamelled cast-iron feet, or with two chromium-plated bent steel tubular legs. Both types are provided with levelling screws.

Another new "Main" model is the "No. 527" streamlined cooker, an "intermediate" type with a minimum of projection from its contour, principally in its hotplate which overlaps slightly at sides and front. The hotplate is covered by a complete hob with openings for each of the three boiling burners. A removable plate protects the griller. The boiling burners and griller are all designed for high efficiency and quick heating, the griller being ready for use in one minute after lighting the gas, and capable of toasting bread at the rate of one side every 45 seconds. The oven is of the balanced-flue type so successful in recent "Main" cookers, but improved in efficiency. The door latch combines a snap or slam catch with a positive tightening arrangement.

The "527" is mounted on a stand with four cast-iron legs, an anti-rocking device being included to accommodate the cooker to an uneven floor. It is supplied with a hinged cover, with or without a shelf, or alternatively, either single or double plate rack, a small-pattern backplate. The "P.R." hotcloset can also be supplied.

The New Main Cookers. *Left*, the No. 527 Intermediate. *Below*, the No. 57 High-Grade.



Other features of the Main stand are the display of water heating appliances, embracing instantaneous and storage types covering every household hot water requirement, and the "Gasclock" prepayment gas-fire installation for hotels and boarding houses.

Waterless (M.A.N) Gasholders

Upwards of 300 Engineers have installed the M.A.N. Waterless Gasholder.

Discuss this modern system of storage with us at the B.I.F.

BIRMINGHAM ENGINEERING AND HARDWARE SECTION 20 FEB - 3 MAR

Stand Ca. 302 & 403

NUMBER OF WATERLESS M.A.N GASHOLDERS IN VARIOUS COUNTRIES

Great Britain	44	98,670,630	India	4	10,000,000
Australia	5	9,600,000	Irish Free State	1	3,000,000
Argentine	1	1,750,000	Italy	7	5,538,765
Belgium	9	8,992,300	Japan	6	15,246,100
Brazil	2	1,675,000	Manchukuo	2	9,180,000
Canada	3	17,969,600	Poland	3	1,957,800
Chile	2	5,821,640	Russia	1	3,526,400
Cz. Slovakia	2	10,589,600	Spain	2	3,879,000
Denmark	5	5,307,200	Sweden	3	10,755,500
France	19	15,675,000	Switzerland	3	2,115,900
Germany	119	214,069,830	Turkey	2	1,500,000
Holland	11	15,727,900	U.S.A.	56	304,470,185

Total Storage Capacity 778,017,750 cubic feet of Gas

CAPACITY OF M.A.N WATERLESS GASHOLDERS ERECTED TO DECEMBER 31st, 1938

			Percentage
Up to and including 50,000	3	up to ½ million	29·1
Over 50,000 to 100,000	14		
Over 100,000 to 500,000	73		
Over 500,000 to 1,000,000	42	½ to 5 million	57·6
Over 1,000,000 to 2,500,000	99		
Over 2,500,000 to 5,000,000	37		
Over 5,000,000 to 10,000,000	31	over 5 million	13·3
Over 10,000,000 to 15,000,000	9		
Over 15,000,000 to —	1		
	309		100%

R. & J. Dempster Ltd., Gas Plant Works, Manchester 10

London Office: **34 Victoria Street, S.W.1.**

GEORGE WILSON GAS METERS, LTD.

Ca. 312, 413

For many years Messrs. George Wilson Gas Meters, Ltd., have realized that the Fair presents an excellent opportunity for meeting old friends, solving problems, and obtaining the views of all on new developments emanating from their research department.

They still strongly press the claims of the "closed-top" meter and incorporate all their salient features—"Straight Line" gas valves and "no-trouble" diaphragms treated with a special non-drip leather dressing, which is claimed to be absolutely impervious to dilution. They continue to concentrate on the registration of small quantities of gas and maintain that dry grinding and buffing of gas valves, coupled with stringent tests, enables their meters to excel in this connexion. Their patented oiling device is fitted as standard on gas valves of industrial meters and the complete "Certus" greasing and oiling system covers all sizes and all points in the meter. Their full range covers meters in cast-iron cases with special internal fittings and calibrations suitable for export to all parts of the world.

The introduction of the "Compensating Valve" will surely appeal to all who value a device which remains inactive under perfect conditions but operates immediately the possibility of trouble occurs. Messrs. George Wilson claim that this device eliminates "cash shortage" or damage to the meter even under the worst conditions, and they submit convincing data to support their views. The whole question provides matter for a wide discussion—for instance, "Did you know," they ask, "that a slot meter can pass unregistered gas when an ordinary meter would not do so?" They welcome your views and criticisms.

The Rutten type safety valve operates automatically and forms a reliable safeguard against accidents. The careless consumer cannot make a mistake as once the supply of gas is cut off it cannot be restored until all taps are shut off or any leakages cured. When everything is safe, the valve automatically restores the supply of gas.

The "Norwich" governor and cut-out valve is a combination of a reliable governor and a safety valve requiring manual operation to restore the supply of gas whenever it is cut off.

The "Adhil" valve is an interesting new introduction designed to cut off the supply of gas in the event of fire. Designed with regard to air raid precautions, the valve ensures that the supply of gas is automatically cut off at the service when the temperature rises sufficiently to indicate danger.

For the past six years the two-part tariff type of slot meter has engaged the firm's attention and a variety of patterns has been introduced and is available for inspection. Unanimity as to the best method of dealing with this problem does not seem possible: some, for example, prefer that the consumer shall have gas at a cheap rate at all times and collect the service charge by other means, while others favour an attachment whereby gas is supplied on the block system and the quantity per coin increased after a predetermined quantity has been used. In many cases, however, it is found an advantage to set the meter at a comparatively low rate and hand back any rebate in the form of a cash discount when the meter is emptied. Messrs. George Wilson are great believers in simplicity and their latest introduction enables the same quantity of gas to be obtained with a coin of lower value after a predetermined number of coins of the original value has been inserted in the meter. This simple device should appeal to many and the firm are still anxious to go further to meet the wishes of all.

An ingenious device is the Peak-Load meter, which records, on a chart, the rate of consumption over periods of one to fourteen days—a distinct asset where it is desired to check peak loads or periods when gas is being used unknown to those responsible for paying the account.

Although diaphragm troubles are unknown to them, the firm state, they feel sure visitors will be interested in two new developments in this connexion. They invite inspection of a dry gas meter without flexible diaphragms, ensuring constant displacement at all speeds—there appear to be great possibilities particularly with larger meters. Revolving diaphragms are claimed to be a novelty on another meter, and, if the idea proves sound in practice, a means is provided whereby the leather dressing will always be kept in suspension, equally distributed, and not allowed to drain away.

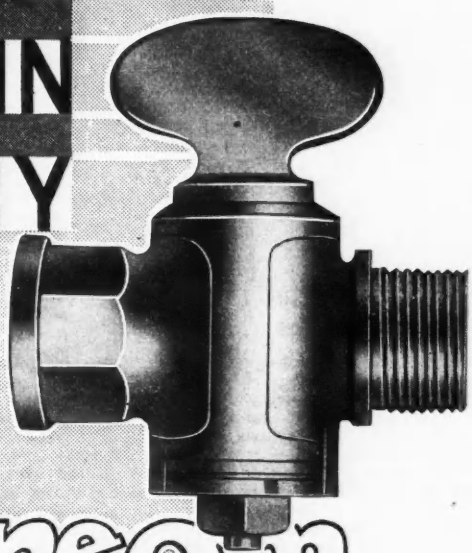
GAS STOVE RENOVATORS, LTD.

Ca. 707

The activities of this Company are now so well known as to merit little comment, but for those who are not yet acquainted with its work a visit to the firm's stand proves of interest.

Considerable saving can be effected by the process of re-enamelling cooker linings, crown plates, splashers, geyser shells, &c. Gas Stove Renovators, Ltd., also offer a complete cooker renovation service—old cookers collected, vitreous enamelled, rebuilt, and put on test.

THE FOREMOST GAS COCK IN THE INDUSTRY



THE 'SPERSOM' GAS COCK possesses unique and valuable features of construction.

THE SELF-LUBRICATING FEATURE utilizes the principle of capillary attraction. Consequently oil is fed constantly from a small reservoir in the head of the plug thereby replacing any lost in service.

THE APPLICATION OF THE SPRING LOADING to the plug is carried out in a special manner, which ensures that the plug is always retained on its bearing at a uniform pressure. Dismantling is never necessary.

COCKS FOR ALL PURPOSES can be supplied with these features—Main Service, Gas Fire, Gas Cooker, etc.

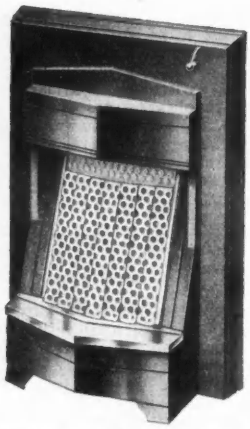
Spersom

REGISTERED TRADE MARK

MADE IN ENGLAND BY SPERRYN & CO., MOORSOM ST. BIRMINGHAM

CANNON IRON FOUNDRIES, LTD.
Ca. 501

A marked advance in gas fire construction is featured in the "V" Inclined Fires made by Cannon Iron Foundries, Ltd. These fires, built on the now familiar "inclined" principle, have the radiants, which are "stepped back" from the centre, with the result that more heat is radiated sidways. "V"-inclined models are fitted with patented automatic flint lighters, and several of the earlier types are also so equipped.



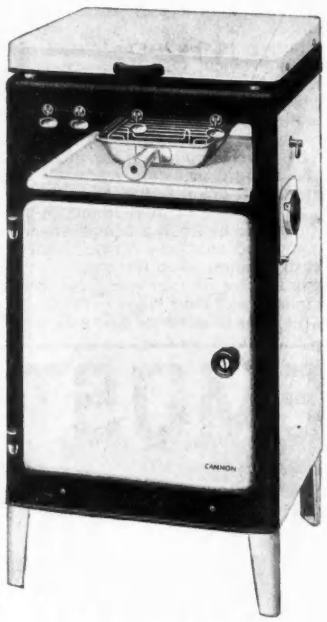
"Virginia" Fire with "Vitaglo" Radiants.

The "Virgina" Series are equipped with the automatic flint lighter operated by a tap on the canopy to obviate stooping. "Vitaglo" radiants are claimed to be much brighter and to give a wonderfully soft glow that pervades every corner of a room. A softer warmth without scorching, the firm states, is always experienced when a fire is fitted with "Vitaglo" radiants.

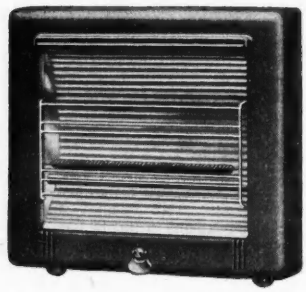
The "Talbot" cooker is of entirely new design with straight lines in keeping with modern kitchen cabinet construction. The "Autimo" head is recessed into the cooker side, but can be easily read from the front. There are no gates, the shelf positions being embossed on enamelled *cast-iron* linings. The oven is fitted with two burners, one on either side, and is closed at the bottom with an enamelled steel plate. The cornice has a deep front concealing the mechanism of taps and injectors, and only shows the fall down levers of the taps. By an entirely new construction supporting brackets underneath the burners have been eliminated, and the grill has been raised to the level of the cornice. The enamelled cover plates of the grill are level with the top sections, and form part of the hotplate surface. The top sections are of the semi-solid type, of a patented construction and combine high efficiency and good combustion with ease of cleaning. Three sizes of "Talbot" cookers are now available, either with enamelled folding top, or with "Advance" plate rack.

The "Autimo" oven-heat controller is perfectly reliable and takes charge of the food in the oven, giving relief to the busy housewife.

The "Henley" cooker is streamline in design, and is stated to embody several exclusive features. A drip shield is extended round three sides of the hotplate to carry any liquids spilt over into the crown plate. If a side panel be damaged it can be removed without disturbing the packing. The connexion to the oven, though concealed, is not embedded in the packing and is quite accessible. Shelf positions are on embossed enamelled linings. The hotplate grill has "High-Speed" steel frets, which heat up to redness in one minute from cold. All structural parts of the "Henley" cooker are in cast-iron, giving great rigidity and strength, steel being used for panels, base plate, &c.



The "Henley" Cooker.



The "Wallflower" Radiant Heater.

In the Gas Industry the Cannon "Beacon" radiator has already gained a name for beauty and efficiency, and it admirably meets the requirements of modern architecture and decoration. It requires no flue connexion, and since the Shops Act, 1934, was passed, the "Beacon" has been in demand as a heating unit adequately fulfilling the provisions of the Act.

The "Portray" is a portable gas heater which combines an attractive appearance and the high-efficiency of a gas fire. With chromium-plated reflector and taps and dress guard, it is fitted with two radiants, each controlled separately, or with one or two burners without taps.

The "Wallflower" radiant gas heater has a cast-iron frame, a heating element of non-corrodible metal, and an aerated burner, and incorporates a chromium-plated corrugated reflector. The gas rate is 10 cu.ft. per hour, and the heater imparts a high proportion of radiant heat. There is no flue connexion. A self-contained model can be fastened directly to a wall by means of three screws.

MAXOL HEATERS, LTD.
Ca. 212, 309

Among the many interesting exhibits on the stand of Maxol Heaters, Ltd., is the "MX/99" counter type hotel heater, which is fully automatic both as regards gas and water. Its capacity is 1½ gallons, and it is thermostatically controlled.

Then there is the "All-in-One" café set, operating under 20 lb. steam pressure, for tea and coffee (by rapid percolation). It can also be used for heating and mixing malted milk in one operation, and heating milk, soups, &c. The firm's multi-point water heater, serving all hot taps. A range of circulators, suitable for attaching to existing hot cylinders for augmenting a separately fired unit or for solo use, is available in three sizes: 10 cu.ft. per hour, 30 cu.ft. per hour, and 60 cu.ft. per hour.

Finally, there is the improved café boiler for hard water districts, which is specially designed for easy de-scaling.

C. R. AVERILL, LTD.
Ca. 209

Both Dixon's Graphite Products and ranges of paints manufactured by this firm are the main features of this display.

At the rear of the stand are exhibited large panels displaying the use of paint finishes applied to both decorative and industrial work. "Avarc" synthetic paints are shown in various finishes, flat, eggshell gloss, and high gloss, in harmonizing colour schemes upon complete wall sections. The application of Dixon's Silica-Graphite Paints for the protection of gasholders is fully illustrated in further varying schemes, and includes an interesting new graphite paint that has recently been developed to render holder crowns less visible from the air.

There are two interesting showcases of which one shows a complete range of graphites for every lubricating and jointing purpose, including compounds and greases incorporating graphite which has been designed for specific industrial requirements. The other case is devoted to further panels of "Avarc" synthetic finishes.

An entirely new exhibit which should be of interest to all this year displays "Kleen" white compound, a jointing material for general plumbing and domestic use. This exhibit takes the form of a tap held in the centre of a vertically positioned sheet of plate glass and apparently unconnected to any source of water supply. From the tap will flow a constant stream of water, causing water in a sink to overflow.

In addition, Messrs. Averill are showing Dixon's graphite pipe joint compound for steam, water, and gas connexions and Dixon's graphite seal, a jointing material for ensuring leak proof joints on all plant carrying hot and cold mineral oils, benzole, tar, &c.

A Display Completely without Precedent

at the

Radiation

STAND No. 402/503

▲

Comprehensive equipment for kitchens of Hotels, Boarding Houses, Restaurants, Cafés, Institutions, Canteens, Hospitals, Schools, etc., including Ranges, Grillers, Hotclosets, Fish Fryers, Boilers, Steamers, etc. Complete supplementary equipment of every description.

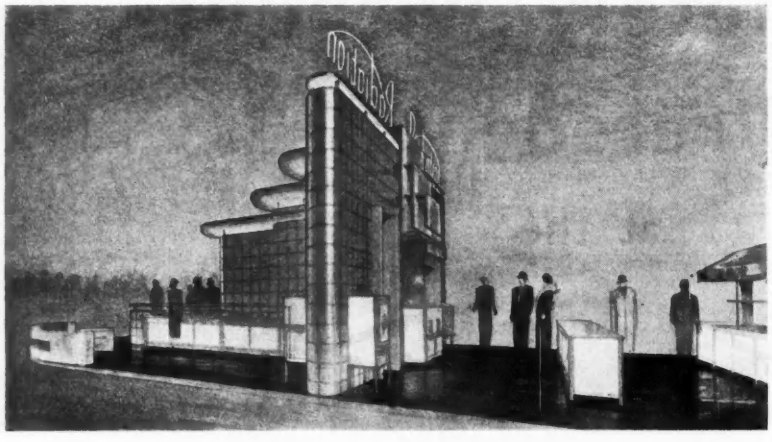
New designs of the popular "New World" Gas Cooker will also be featured on the Stand, having the very latest developments in labour saving and finish, with automatic lighting of the hotplate burners and other outstanding improvements.

Expert Planning advice gladly given

RADIATION LTD.

RADIATION LTD.
Ca. 402, 503

Glass, stainless steel, and an intelligent use of artificial lighting have resulted in a Radiation stand remarkable for its individuality and freshness of outlook. At the same time, complete harmony with the exhibits has been happily achieved by the designer. The central walls have been built of hollow glass bricks, which are illuminated from the interiors very effectively. The flyovers are worked in stainless steel and are surmounted by Neon signs.



An impression of the striking Radiation exhibit.

The floor is of blue glass, on the outside of which runs a skirting of steel, and the doorways leading from back to front of the stand are formed of pylons of the same metal. The modern note of steel and glass is carried to completeness in the corner seats and the tables, which are also constructed of glass and stainless steel.

Radiation Ltd. are this year devoting the greater part of their stand at the Fair to a special display of large gas-heated cooking equipment.

The principal exhibit is an impressive sixteen oven "Grosvenor" central range, complete with treble stockpot stand, *bain marie*, pot rack, and hood, eight of the ovens being of new design and fitted with "Regulo" control, the remaining eight retaining the fully-externally-heated principle giving maximum control over oven atmosphere.

Another quite new design is the pedestal type boiler for stews and vegetables. This is particularly easy to clean and to keep clean, the cylindrical casing covering the body terminating in a sheer vertical which can never be a dirt trap. A clean pedestal base completes the hygienic effect. The burners are of the non-lighting-back type, with flash-tube ignition. A steaming oven, shown with the latest form of relay thermostat control, combines simplicity and speed of operation. Its clean lines, especially of the capstan fastening on the door, make an immediate appeal.

The "Belgravia" carving table and hot closet is shown in a 12 ft. run of two 6 ft. sections. Thermostatic control is used on the bodies and on the *bain marie*, the carving wells having separate taps to each. The doors slide at a finger touch, and lift off for thorough cleaning, or for removal of the interior parts, including the shelves. The gas rail is hidden under a neat polished metal screen.

The "Savoy" griller is shown in its two extreme forms, the "Savoy Minor," which is suitable for small cafés, snack bars, or private houses, and the No. 36 "C" pattern, which is now being installed in the larger hotels and restaurants. The "B" and "C" patterns include a solid fluted brander which cooks both sides of any grill at once, perfect even to the dark searing lines obtained with a charcoal grill. The saving of gas and time is frequently over 50%, and "Minute Steaks" are being demonstrated, grilled in one minute.

The "Whitemount" pastry oven, a multi-deck appliance with one set of burners and variable control by dampers, is also being shown.

The "White Lady" hotcloset, on which the "Savoy Minor" is mounted, is very suitable for small hotels, boarding houses, hospital wards, and other places where a small warming oven is needed. Fish fryers are represented by a three pan "Wardour" model, complete with hood and draining rack. The hob is a one-piece nickel-plated casting, literally streamlined so that any drops drain back into the pans. The pans themselves are emptied by taps underneath, so that there is no heavy lifting to be done.

All these Radiation appliances, in fact, have been designed for easy operation, a feature appreciated by male or female cooks. Two new designs of the popular "New World" gas cooker for ordinary domestic use are also featured on the stand. These incorporate the very latest developments in labour saving and finish, together with automatic lighting of the hotplate burners and various other striking improvements.

SMITH METERS, LTD.
Ca. 711

A very artistic and effective display has been arranged by Messrs. Smith Meters, Ltd. Several new productions can be inspected either sectionally or in glass-panelled cases.

The chief features this year are centred upon the highly efficient "Radial Valve Action," the enclosed gear-box for all types and sizes of meters and non-corrosive, non-wearing bearings. New models include improved action on the "Du-slot" attachment. A new form of tariff or rent collecting meter should be of special interest to gas undertakings' officials.

WILLEY & CO., LTD.
Ca. 705

This old established firm, whose products cover a wide range from gasholder to bib cock, are showing an interesting range of gas meters fitted with glass panels and continuously operating. This is of interest to students and others, demonstrating to them the gas meter's mechanism functioning under working conditions.

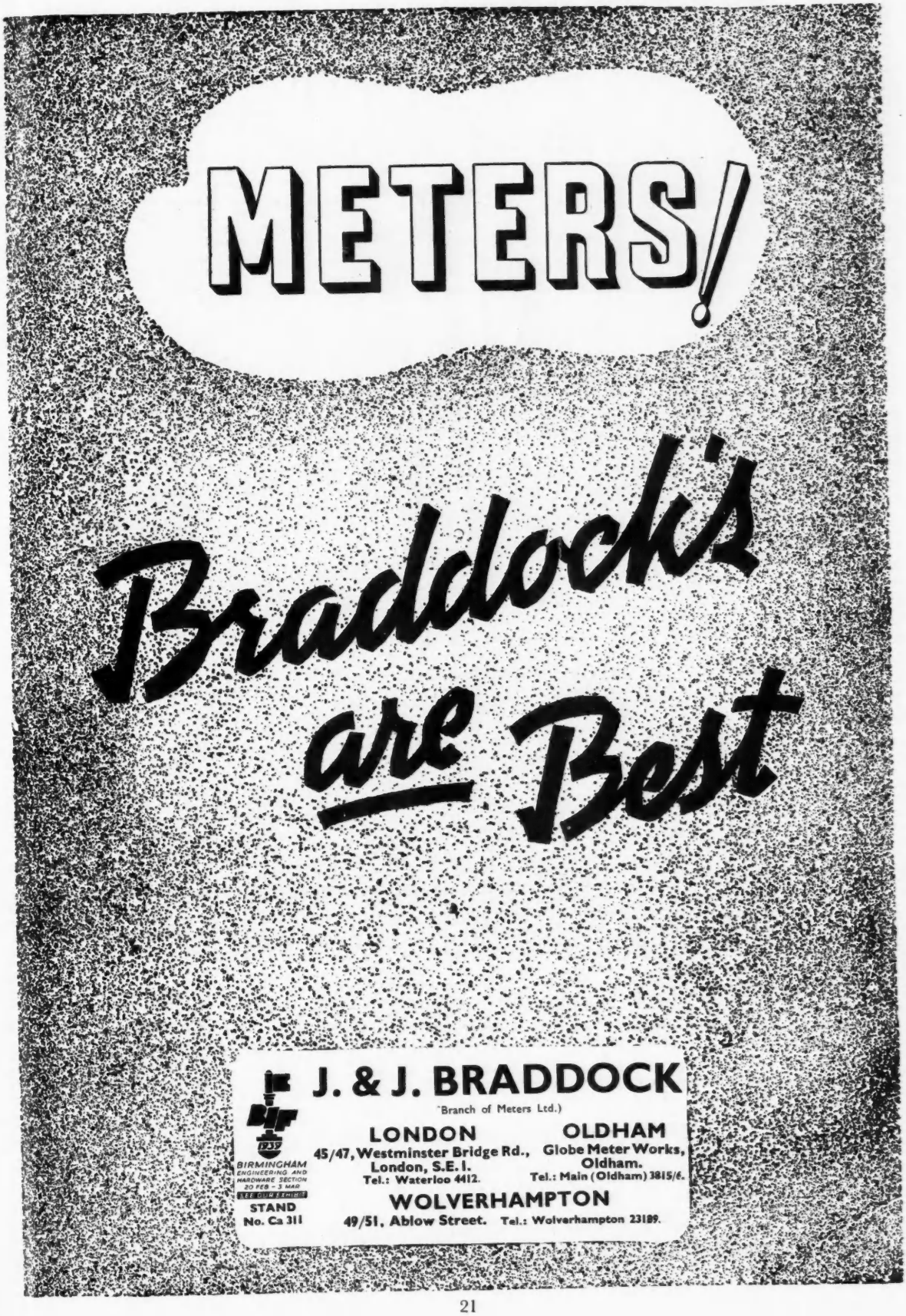
This firm is also showing an interesting selection of the latest designs in gas fittings, such as floor and main cocks, laboratory fittings, &c.

IDEAL WATER SOFTENERS
Ca. 213

It is common knowledge that in districts where the water is hard—and there are many—gas undertakings are confronted with the difficulty of scale formation in water heaters. Maintenance of water-heaters in hard water districts is a consideration to which much thought has to be given. Hence the interest which attaches to a relatively inexpensive water softener for use in combination with sink heaters and other water appliances. From our illustrations it will be seen that the softener is neat and unobtrusive. From the gas undertaking's point of view, the advantages of softened water are apparent, and there must be many housewives desirous of availing themselves of a supply on tap of soft hot water, with a consequent and considerable saving in soap and in time and labour in washing. Both gas undertaking and consumer stand to benefit by its installation.

The softener—it is made in three sizes for use with multi-point heaters or any type of water heater—is of the base exchange type specially designed to minimize back pressure and not interfere with the working of the valve on the heater. Its attachment to sink water heater is simplicity itself. Regeneration is effected by common salt—with the smaller size softener five to seven days, with the larger model every seven to ten days. The "Ideal" softeners with water heaters are exhibited on the stands of the following water heater manufacturers, Messrs. Ewart & Sons, Ltd.; Parkinson Stove Company; J. H. Robinson & Co., Ltd.; and Maxol Heaters, Ltd.

"Ideal" Water Softener coupled with Water Heater.


METERS!
Braddock's are Best
J. & J. BRADDOCK
(Branch of Meters Ltd.)
LONDON
45/47, Westminster Bridge Rd., London, S.E.1.
Tel.: Waterloo 4412.
OLDHAM
Globe Meter Works, Oldham.
Tel.: Main (Oldham) 3815/6.
WOLVERHAMPTON
49/51, Ablow Street. Tel.: Wolverhampton 23189.
BIF
1939
BIRMINGHAM
ENGINEERING AND HARDWARE SECTION
20 FEB - 3 MAR
STAND
No. Ca 311

JAMES STOTT & CO. (ENGINEERS), LTD.

Ca. 608, 709

New products exhibited by Messrs. James Stott & Co. (Engineers), Ltd., of interest to the Industry and caterers include a gas-operated pressure steamer, having multi-compartments all operated from one generator, automatic steam cut-offs to each compartment, and the steam supply and heating medium automatically regulated to the number of compartments in use. This appliance has fully automatic air ejection and temperature control. The "Stott" auto-fry fish and chip range is also to be seen. This is a chip range with thermostatic control to the pans, resulting in fat saving and perfect cooking.

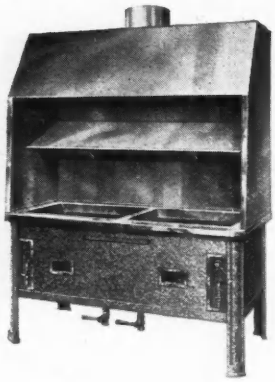
The "Stott" gas showroom water heater display trough, fitted as dummy cupboard, with stainless steel trough, illustrates a number of water heaters. This manufacture is stated to be used in a number of modern gas showrooms.

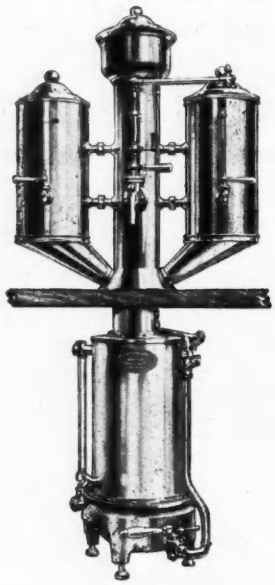
The "Stott" Masterset, it is noted, incorporates additional devices, the latest additions including steam pressure tap for warming milk by the glass, and steam egg poaching and boiling. The "Bristol" pattern hotcupboard is a combination of two cupboards, vapour controlled.

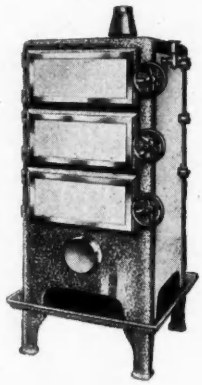
Then there is a single compartment handy sized steamer in stainless steel. The "Auto-heater" is an automatic water heating device, mid-way between instantaneous and storage types, and is very suitable for supplying hot water for wash basins: this is now being generally done by many firms under the new Factories Act.

Several appliances are shown heated by "Calor Gas."

In addition to the above there is shown a special milk bottle warmer suitable for warming one-third of a pint milk bottles for school use, with even temperature distribution throughout the warmer, and the firm's standard range of hotcupboards, soup warmers, water boilers, coffee making machines, ham cookers, &c.







Examples of Stott Catering Equipment.

PARKINSON & COWAN (GAS METERS), LTD.

Ca. 502, 603

W. Parkinson & Co.

Messrs. W. Parkinson & Co. are exhibiting many items which appeal to the Industry and Public Lighting Engineers. These comprise a full range of meters, ordinary and prepayment, including an entirely new pattern two-coin optional movement embodying all the latest requirements within the smallest compass. There is a greater range of setting than has before been accomplished, the maximum prepayment being 2,300 cu.ft.

They are also showing a standard test gasholder, and a gas heated petroleum vaporizer for overcoming naphthalene troubles. Laboratory test meters and pressure gauges are also a speciality and samples are on view. On this stand modern gas lighting equipment is displayed, including the "Maxwell," "Brimax Maxilla," "Stechford," and "Warwick" series of lamps for Group A and B lighting. Factory lighting equipment is also shown.

W. & B. Cowan

This Company is exhibiting consumers' meters, ordinary and prepayment. Their "arc-valve" type is the subject of an attractive brochure setting out features which make for low-pressure absorption and durability of diaphragms. A large "hide" is displayed showing the possibilities of one-piece leathers for industrial meters. The firm claim for their leather technique that uncertainty of performance of their meters under reasonable conditions can now be considered as a thing of the past.

A new two-coin optional prepayment mechanism appears on this stand with a wider range of setting than has previously been achieved—*i.e.*, 4 to 54 cu.ft. for one penny, or 48 to 648 cu.ft. for one shilling—maximum prepayment 2,300 cu.ft. The appearance of the movement is small and neat with an economy of parts. This is strikingly shown in contrast with one of the earliest prepayment movements made by the firm. Accuracy of coin purchase is claimed and demonstrated by a testing device which represents the working of the meter accelerated. Many subsidiary features have been introduced into this mechanism for the purpose of preventing fraud, and generally speaking, it may be said to be a step forward in the design of coin mechanisms for gas meters.

The "B.K." vacuum retort house governor is another product which is steadily progressing in favour. In contrast to that type of governor employing "relay" power, the "B.K." depends only upon its lightness and sensitivity. It is claimed to solve the tar problem by catering for its separation. Totally enclosed and dustproof, it can be pressure-loaded from a distance if desired.

THE GAS METER COMPANY, LTD.

Ca. 703

Included in the very comprehensive display of their manufactures will be seen several new features, which have been developed during the past year by the Gas Meter Company, Ltd.

The firm's new pattern two-coin optional prepayment meter, first marketed last month, is claimed to incorporate many fresh ideas and has one slot only for pennies or shillings. Gas can be prepaid up to 2,300 cu.ft., and the price range is from 4 to 54 cu.ft. per penny. The stop valve is fully open at 3 to 4 cu.ft. prepayment. Coins are drawn in by specially designed cams.

The clock mechanism of the light actuated control device for street lighting designed by the South Metropolitan Gas Company is demonstrated in a special lamp. This device is now being used at special road centres in the London area. Emergency control device for use under A.R.P. conditions has received special attention and is demonstrated on this stand. Models of all types of meters and clock controllers for various purposes are on exhibition.

R. & J. DEMPSTER, LTD.

Ca. 302, 403

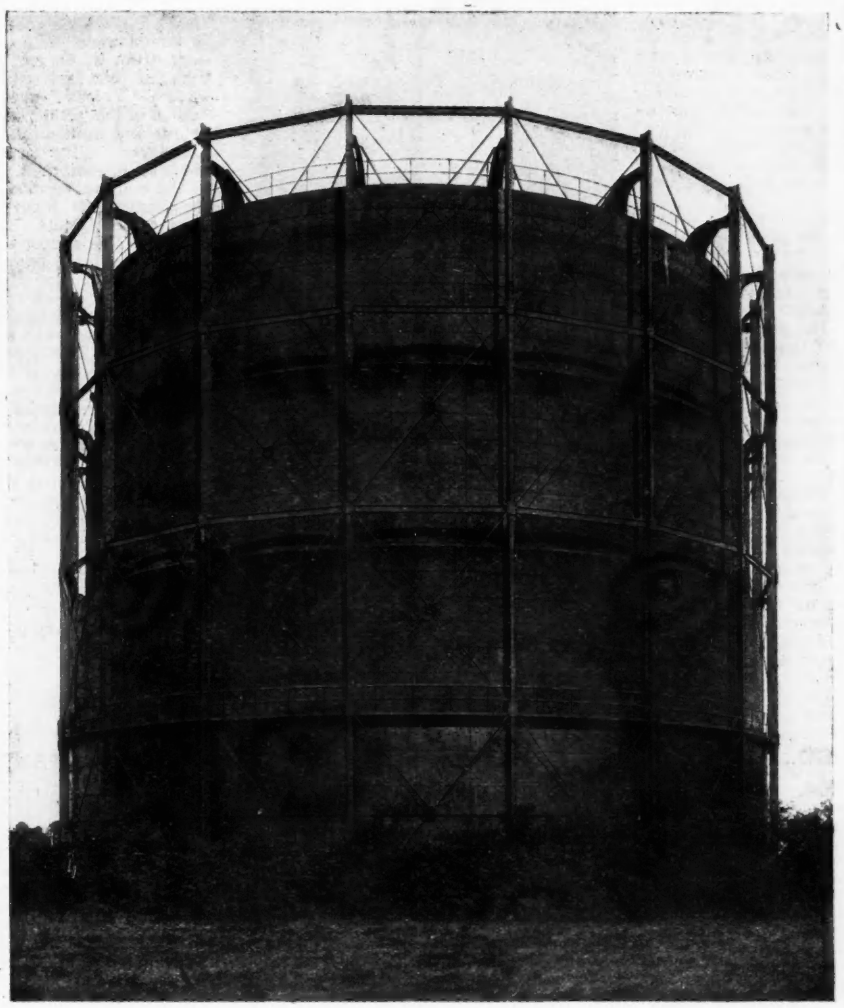
Associated with the Waterless Gasholder Company, Ltd., upon whose stands may be seen displays relative to British-built M.A.N. waterless gasholders, are Messrs. R. & J. Dempster, Ltd.

Progress photographs show the various stages of construction and completed holders. Enlarged and coloured drawings provide full details of a holder and a full size section of the sealing arrangements is also on view. Leaflets, brochures, &c., give progress of the M.A.N. waterless gasholders throughout the world. British contractors have erected 55 M.A.N. waterless gasholders with a total storage capacity of 118,281,000 cu.ft. to date.

WE INVITE YOU TO INSPECT OUR PATENT GAS VALVES
AT

B.I.F. BIRMINGHAM

Stand No. Ca 610



A FULL RANGE OF VALVES WILL BE EXHIBITED AND THE INTERNAL CONSTRUCTION CLEARLY DEMONSTRATED. A COMPETENT STAFF WILL BE IN ATTENDANCE AND WILL WELCOME YOUR VISIT AND INTEREST.

WESTWOOD & WRIGHTS LTD

BRIERLEY HILL — STAFFS.

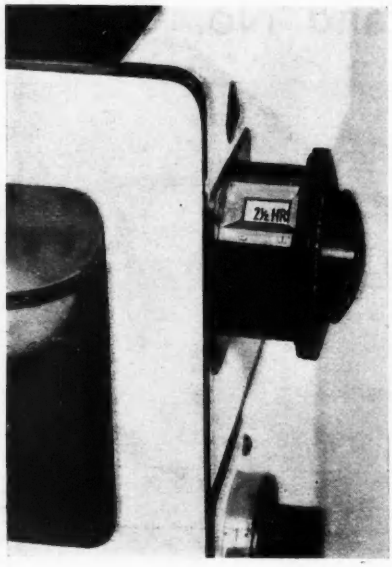
SMITH'S ENGLISH CLOCKS, LTD.

(To be seen at a number of Gas Section Stands.)

On the stands of eight or nine of the principal gas cooker manufacturers at the Fair are shown a new time control unit introduced by Smith's English Clocks, Ltd., consisting of a spring-wound clock movement in which the mainspring operates the plug of a specially constructed gas cock connected with it by a universal joint to prevent misalignment. It is possible to set the clock to operate at any time from ten minutes to two hours and fifty minutes, in stages of ten minutes, from the time of setting, and the appropriate time is shown in a visor similar to that of the more familiar thermostat as the outer knob of the unit is rotated. The turning of the knob serves the dual purpose of winding and setting, so that there is no risk of performing one operation without the other, as with an ordinary alarm clock.

As the clock unwinds, the figures shown in the visor turn with the passage of time, so that at any period of the cooking the remaining time can be seen at a glance. When the time is "up" the spring automatically turns off the gas. All that is necessary after setting the clock is to turn on the gas by means of the centre control knob, which is virtually the oven tap. Whenever it is desired to use the oven without the time control all that is necessary is to pull the centre knob outwards and rotate it in a clockwise direction, using it as an ordinary tap. When this tap is turned to the "off" position the unit is again ready for use. The clock is entirely independent of the thermostat. Owing to the drilling that would be necessary it is not intended that the unit shall be made available for fitting to cookers already in use, but it will be possible to have this device as an optional extra to nearly all new cookers.

The invention represents a big advance towards trouble-free cookery, and provides the gas salesman with another strong selling point in dealing with the modern housewife who looks to gas to lighten her domestic time-table.



Two-and-a-half hours to go ; a Smith clock fitted to a modern cooker.

VULCAN STOVE COMPANY, LTD.

Ca. 506

The exhibit consists of samples of cookers from their various series, each of which provides special characteristics to meet differing tastes and conditions. All cookers exhibited are fitted with pressed steel side linings, embodying shelf runners and stops, oven heat controls, and other "Vulcan" features. Samples of the well-known "300" series are shown in mottled and plain colour porcelain enamel finishes.

The "200" series are on view in which steel pressings are used where advantageous in combination with a cast-iron cornice, door, front frame, &c., giving a light, but at the same time rigid, construction. The well-known "Vulcan" glass panel door is embodied in the "500" series; samples in plain colour and mottled porcelain enamel finish are shown. The semi-streamline cooker, No. 418, is exhibited. This combines much of the compactness and neat appearance of the streamlined type of cooker, with the more useful features of the more orthodox designs. This cooker embodies a good-sized hotplate, is fitted with semi-solid top-bars, and many detail improvements.

Samples of wholly streamlined cookers are the S.1000 exhibited in two finishes—*i.e.*, plain black and white and mottled porcelain in enamel. This cooker, which is of entirely new design, is fully streamlined, all unnecessary projections having been eliminated. A special design of flush fitting door is used, giving a perfectly flat front. A new design combined rack and splasher is fitted, which can be lowered so as to give entire cover to the hotplate when not in use, thus giving a particularly neat appearance.

Among other exhibits are a new series of boiling plates in combinations of two and three burners, and a new warming-plate consisting of a flat chromium-plated top suitably mounted to be used with a gas flex and plug-in point, intended to be placed on a sideboard for keeping food, plates, &c., warm.

EVERED & CO., LTD.

Ca. 504.

This Company is exhibiting modern gas lighting fittings and engineering brasswork for the Gas Industry.

The term "Brasswork" covers many component parts of vital importance in modern gas appliances of all kinds, the production of which calls for much research and experimental work, and for accurate measurement. Evereds have a special Measuring Department attached to their toolrooms, which in turn are equipped with machines on which measurements of jigs and tools can be checked to a limit of 0·000025 in.

Evereds are showing for the first time a gas carburettor specially designed for running-in new and rebored automobile engines.

Examples of plumbers' brassfoundry, water heater fittings, laboratory fittings, and a display of black and coloured heat-resisting Bakelite knobs and handles are among other exhibits.

BARKER & TURNER, LTD.

Ca. 708

Messrs. Barker & Turner, Ltd., are exhibiting what are claimed to be very great improvements in washing machine and wringer design, but unfortunately the legal position in regard to foreign patents does not permit us to give details at the moment.

NATIONAL GAS WATER HEATER COMPANY, LTD.

Ca. 702

The exhibit of the National Gas Water Heater Company, Ltd., comprises a comprehensive range of water heating equipment by gas, suitable for every hot water requirement.

On the domestic side under the name "National" the Company are showing their well-known sink heater and multi-point models of three gallons and four gallons capacity per minute. Another useful addition to the "National" range is the new bath heater, and this is exhibited at the Fair for the first time. This bath heater has been designed to bring maintenance costs down to a negligible level.

The "National" bath heater can be dismantled for cleaning without the necessity of using a tool of any kind, while the flue, due to the ever-fixed baffle need not be broken. The operating mechanism is simple and includes a water valve ensuring that the heater will not burn gas unless the water is flowing, an automatic safety pilot device, and a volume gas governor to ensure a correct gas rate.

The "National" range includes the "Ruud" heaters suitable for industrial and commercial purposes, and with these heaters hot water installations of any volume and at almost all temperatures, from cold to boiling, can be provided. The "Ruud" line has both instantaneous heaters and the multi-coil heaters for storage systems, large numbers of these being in use in all parts of the world. These heaters are specially suitable for A.R.P. requirements, the instantaneous giving reliable hot water supply in continuous flow for de-contamination at constant temperature.

ALDER & MACKAY, LTD.

Ca. 303

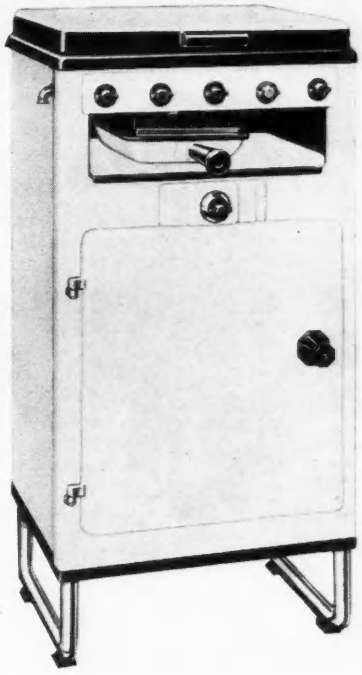
Messrs. Alder & Mackay, Ltd., this year present their "D.S." (Delayed Selector) optional coin meter, now firmly established, in an entirely new "light." This is a most interesting departure. The construction and action of the dry meter present no mystery to the visitor calling at this stand.

A new feature will be their 1s. prepayment two-part tariff meter. This mechanism incorporates an ingenious arrangement behind the front plate which automatically increases the delivery per coin by the desired amount after the full rate quantity has been paid up. These exhibits are supported by a representative range of the Company's meters, gauges, and standard testing instruments.

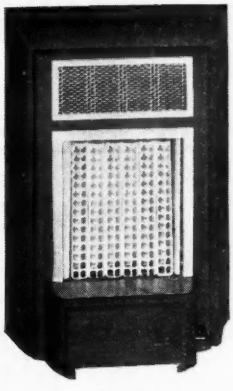
3 IMPORTANT ADVANCES IN DESIGN

GENERAL

THE "MAJOR" GAS COOKER



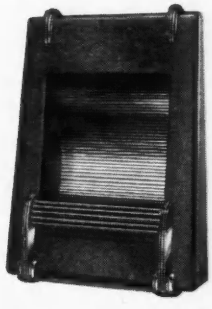
Concealed safety-type gas cocks, a cast-iron oven base forming com bined condensation tray and fire protection plate as required by the L.C.C., a choice of solid base, tubular or ordinary type legs, are among the many outstanding improvements in the "Major" Gas Cooker. The patented "Pannier" Side Units, supplied at extra cost, can quickly be fitted to any "Major." They provide a very large hot-plate, and either side unit may be a grill, one boiling burner, or a two boiling burner unit.



THE "C.R." FIRE

The new "C.R." Fire, with its total efficiency of 70%, is the Gas Industry's real answer to the campaign for the use of solid fuel. Occupying little extra space, requiring no additional maintenance, with a two-part tariff, the "C.R." Fire is as cheap for continuous burning as the solid fuel fire.

THE "PORTANS" PORTABLE GAS FIRE



Made of pressed steel with a chromium-plated reflector, the "Portans" combines high efficiency with a pleasing appearance. Its gas consumption is low (10 cu.ft. per hour) and it is classed as a flueless heater. The "Portans" is light and easy to carry, and is finished in a range of attractive colours.

SEE THEM ON STAND CA601

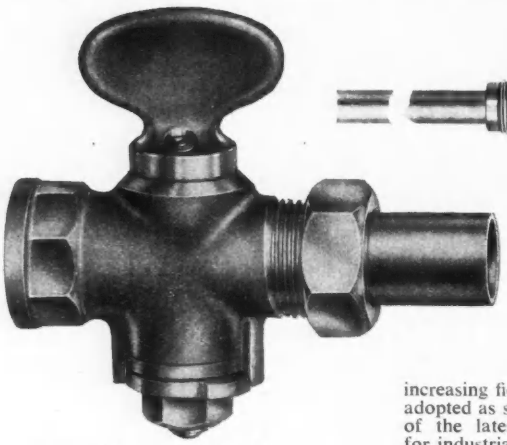
at the British Industries Fair, Castle Bromwich, or write to us for illustrated lists and further information.

GENERAL GAS APPLIANCES LTD., CORPORATION ROAD, AUDENSHAW, MANCHESTER

(Proprietors: ALLIED IRONFOUNDERS LTD.) *Telephone:* DENTON 2474/7. *Telegrams:* GENERAL, AUDENSHAW.

SPERRYN & CO.
Ca. 508

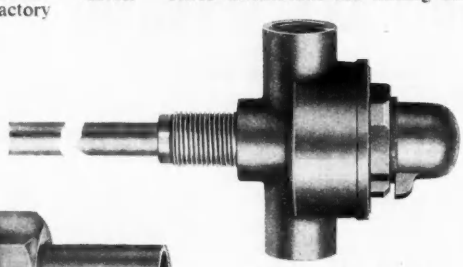
Sperryn & Co. are showing brass cocks of various types incorporating the patent features of spring-loaded self-adjusting plug and automatic lubrication. These give the essential features of extra life, soundness, and efficiency under all conditions, *plus* the advantage that they will remain satisfactory without attention for long periods and at no time require to be taken apart. Further, the patent features are of particular value in the case of accident or emergency, as they ensure that the cock can be operated with ease at all times. Obviously, the potential danger of a cock that has either partially or wholly seized up under such circumstances is enormous. The engineer who uses this cock, therefore, has provided himself with a safeguard against such dangers, and ensures a trouble free service.



Sperryn Main Cock.

These main cocks, in addition to having the features described in the above paragraph, are now being produced by a special method which gives a glass smooth surface to the plug and body. This process enables the cocks to remain sound at very high pressures. The advantages claimed for this method of manufacture are apparent.

A number of different patterns of the "Spersom" thermostats are also on view, together with "Spersom" remote control valves. These thermostats are finding an increasing field of usefulness, and have been adopted as standard on a number of cookers of the latest type, while the larger sizes for industrial purposes are proving their efficiency in ever-increasing applications, including such exacting conditions as those required for Air Ministry work.



Sperryn Thermostat.

The liquid type thermostat shown is a most convenient instrument for fixing on modern gas cookers, as by means of a capillary tube the position of the thermostat head can be determined without relation to that of the oven.

This type of instrument is in general use in the American Cooker Industry, and the firm have obtained the rights to manufacture them under the Wilcolator patents. These patents cover several new features which have not previously been available in this country.

In addition to the above, examples of brasswork made by the very latest methods will be displayed, including cooker cocks of many patterns, furnace cocks, screw down water cocks, &c.

THE HORSTMANN GEAR COMPANY, LTD.
Ca. 408

This Company is again exhibiting an interesting and comprehensive display of its "Newbridge" automatic lighting appliances for public lighting, industrial and domestic purposes, which effectively shows the high standard of design, construction, and workmanship employed in their manufacture.

A full range of clock controllers includes the 5/3/ENC. main tap controller for industrial purposes, the 15/3A/COM. controller which enables "Comet" ignition to be applied to suspension lamps of all types, and the 3A/UNI. controller for general purposes. The "Comet" automatic igniter is also shown under working conditions.

Among the interesting new devices will be found the "Newbridge" air raid valve by means of which public gas lamps can be promptly extinguished in the event of alarm, either by an increase or decrease in the mains pressure, in which case the lights will remain out until the valve is re-opened manually.

On the domestic side the "Newbridge" gas pistol has been the subject of various improvements. "Newbridge" gas switches are also demonstrated and most of the stands in the Gas Section are fitted with them. The various types either for by-pass or catalytic ignition are neat in appearance and positive in action and should impress those who realize the importance of retaining and extending the lighting load.

NEW GEYSERS (1931), LTD.
Ca. 410

New Geysers (1931), Ltd., are displaying geysers and water heaters of all types. Some entirely new models are shown for the first time, including a non-condensing multipoint, to be known as Barralets, No. 42 N.C., which incorporates many special features. Also a number of storage water heaters of new design, some combining both storage and instantaneous heating capacities, which should prove of particular interest.

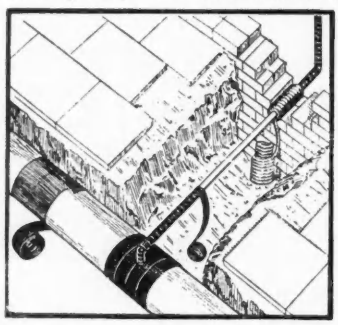
The "Efficient" gas wash coppers are of special construction, having a low gas consumption and do not require ventilating.

WINN & COALES, LTD.—Ca. 206

The stand of Messrs. Winn & Coales, Ltd., includes many interesting examples of "Denso" anti-corrosive products providing a solution to the corrosion problems which all technical men experience from time to time.

The wrapping provides a safe and sure method of completely protecting pipes and cables, and, in fact, any metal work that is liable to suffer from corrosion, no matter whether the position be above or below ground, or the corrosive influence acid, alkaline, or electrolytical. A collection of specimens illustrate clearly the serious damage suffered by unprotected pipes, and also the excellent condition of pipes in similar positions which have been protected with "Denso."

In cases of extreme temperature, frost proof grease provides a sure safeguard against the freezing of manhole covers, &c., whereas "Denso Therm" preparations are used in place of "Denso" in positions which are subject to heat. Additional to its use as an anti-corrosive, "Denso Therm" will prove of interest to mechanical engineers, as it may be used as an insertion for bolted or riveted seams where a corrosion free waterproof joint is necessary, such as in buildings subject to harsh weather conditions, corrosive fumes, &c., and also as an insertion for glass roofs to prevent loss of heat or entrance of moisture.



"Densolene," a liquid anti-corrosive preparation in the form of an oxidizing oil, is shown, which has the outstanding quality of being just as effective on rusted surfaces as on new. It will penetrate the rust and prevent its further formation, and, due to its high flash point, it is specially suitable for heated surfaces.

A model is to be seen representing a basement of a building and showing a manner of using "Denso" products to effect a gas, water, and corrosion proof stopping for entries below ground where pipes or cables enter. The advantages of this plastic sealing will be very apparent upon examination of the model.

Another attraction is provided in the form of a film exhibition, which shows the general uses and methods of application of "Denso" products. Interesting features are shots taken during the gas proofing of some of the London banks, and also of great interest to gas engineers is the section showing a means of extinguishing a flaming gas main which has been fractured during an air raid and the temporary stopping off of the main.

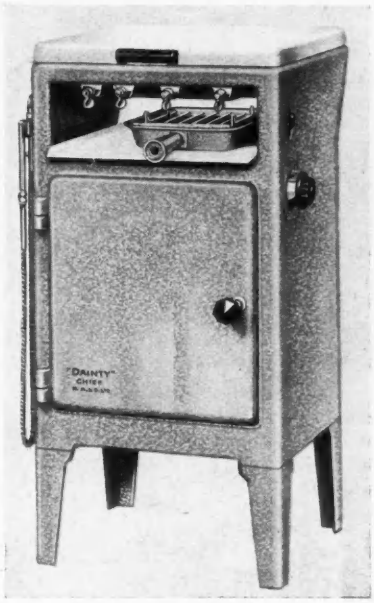
R. RUSSELL & SONS, LTD.

Ca. 606

This year, Messrs. R. Russell & Sons, Ltd., who claim to be pioneers of the cast-iron streamlined cooker, are exhibiting their "Dainty Chief," a full-sized family cooker of the most advanced design. While of rigid cast-iron construction, the lines are so moulded that projecting joints and sharp corners are completely avoided, making cleaning as easy as possible. The white enamelled cover is hinged in an unusual but sound manner at the back and is automatically locked in position, but instantly raised or lowered by one finger. The hot-plate, fitted with three boiling burners and griller, has semi-solid sections, high efficiency or drilled ring burners are optional. The taps have bakelite non-conducting handles; the whole cooker is an exceedingly pleasing example of modern labour-saving cooking apparatus.

In addition Messrs. Russell are exhibiting a selection, in colours, of their patent "Peveril" self-lighting gas fire—a fire of high efficiency and silence in action. A working example of their well-known "New Herald" gas combination, this comprises in one compact, self-contained unit a thermostatically-controlled gas oven, a gas fire, a hotplate with three boiling burners and griller, and last, but not least, a gas-heated circulating boiler, also thermostatically-controlled, all ready for connecting to the existing hot water circulation pipes, fully capable of supplying the hot water requirements to bath, lavatory basin, and sink of the average size modern household.

A section of the "New Herald" and "Dainty" series of gas cookers is shown, with single burner bottom flue outlet ovens and patent condensation base that catches any condensate from oven and directs it to a hot spot near to burner where it is evaporated and discharged up flue pipe.



The "Dainty Chief" Cooker.

J. H. ROBINSON & CO. (LIVERPOOL), LTD.

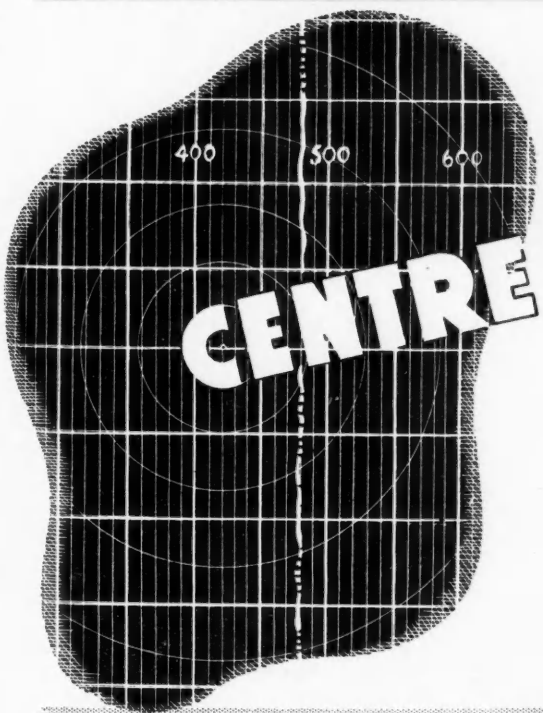
Ca. 607

Messrs. J. H. Robinson & Co. (Liverpool), Ltd., are showing models of gas meters with transparent cases demonstrating various patented improvements they have introduced from time to time. In particular, they call attention to their oiling and greasing devices, which, although looked on with a certain amount of criticism when first introduced, the firm claims, are now acknowledged successes.

The hexagonal or "Plough" valve is also featured in conjunction with the oiling device, and many advantages are claimed for this design. An interesting and important development of a prepayment valve is shown on a large-scale model. This valve has solved many difficulties and plays an important part in the success of the "Excelall" prepayment meter. Engineers are invited to examine its construction and reserve oil chamber. A 1,200 cu.ft. meter with top and valve box cover removed to show working parts is a working model.

Samples of hot-pressed gas and water fittings, meter parts, &c., and "Aintree" instantaneous water heaters are effectively displayed, and models are seen at work giving scalding or boiling water at will. Finished in various colours their efficient performance and safety arrangements make them a very attractive proposition to all interested in water heating. The "Junior Aintree" model to operate under low water pressure also merits attention and will justify a thorough examination.

The storage type of water heater is a new model which has several interesting features, particularly as regards safety and convenience of lighting.

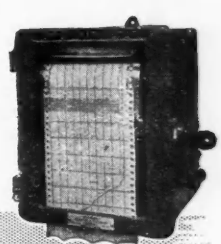


CENTRE OF ACCURACY

Once again we have "taken a stand" for accuracy at the B.I.F., Castle Bromwich.

On it is shown a representative range of the World's finest pyrometers.

The "INDICORDER" Recording and Controlling Pyrometer shown sets a new standard of accuracy for control of gas furnace temperature.



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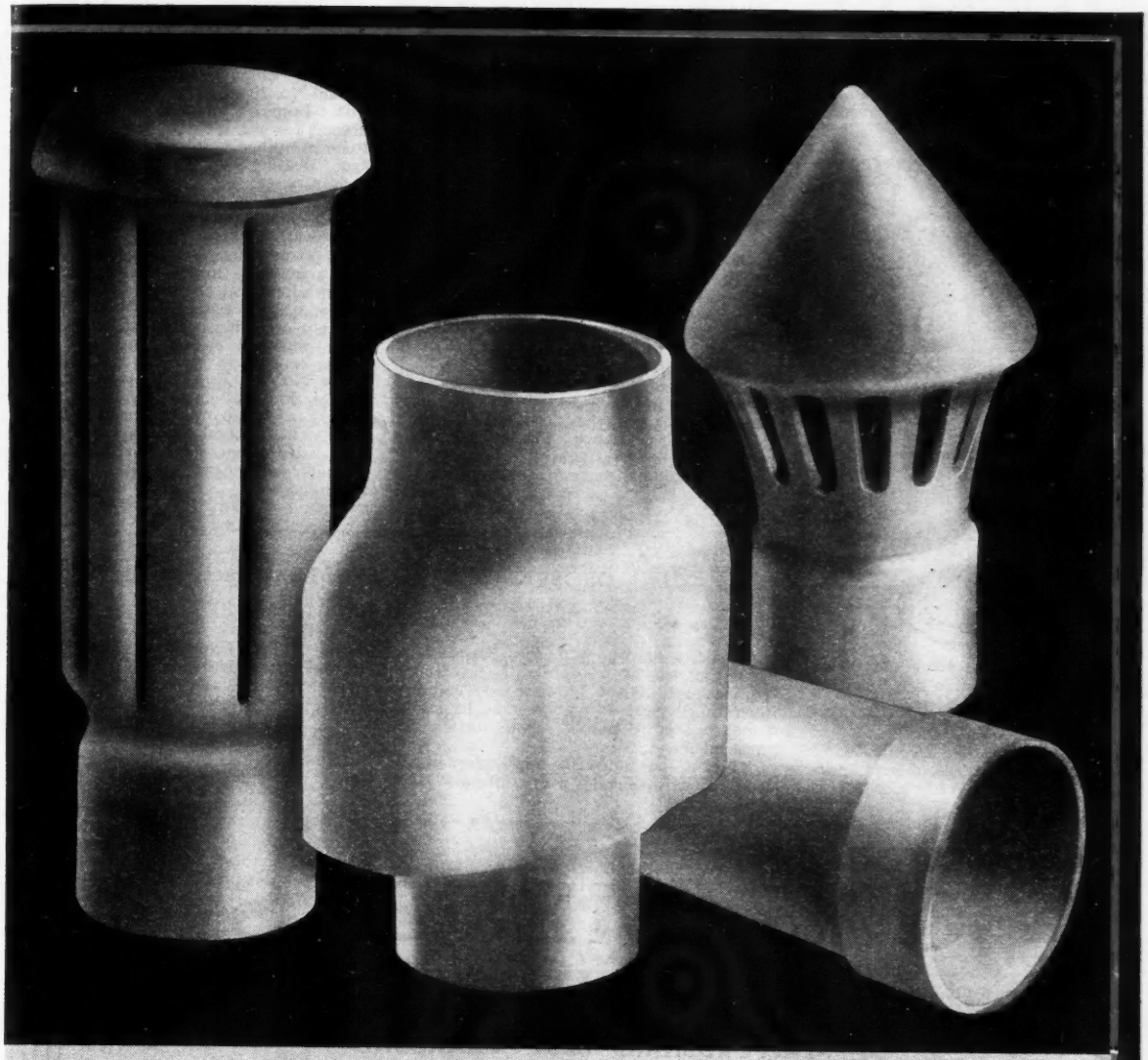

For the finest texture and finish—for light weight, accuracy and ease of installation—specify Incorrosible Urastone—the standard of the gas industry.

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'Phone: (3 lines) Holborn 5291 2 and 8824. 'Grams: Cellactite, Holb, London. Works: Higham, Kent.

BRITISH INDUSTRIES FAIR, 1939

Will our customers and other friends kindly note that, whilst our exhibit is not in the Gas Section, URASTONE flue pipes and fittings will this year be displayed in full range on our Stand in the Building Section, No. B. 623 522, where all visitors will be warmly welcomed.

INCORROSIBLE

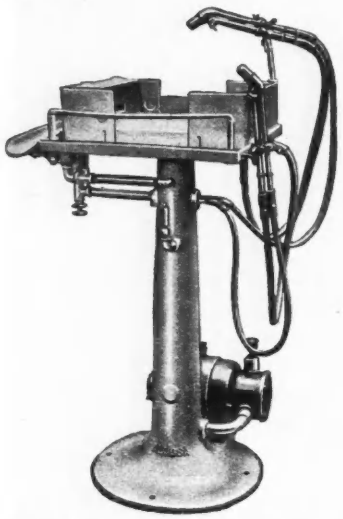
URASTONE *developed by the originators of asbestos-cement flues & ducting*

TAS/US.215

A. H. WILKES & CO.

Ca. 609

This Company, in conjunction with Messrs. William Allday & Co., Ltd., are exhibiting a full range of their specialized gas appliances.



The PFO 40 Combined Forge and Blowpipe Hearth, with enclosed drive electric air and gas blower.

The new enclosed drive electric blowers for gas and air in full range of sizes appear, blowing, exhaust fans, furnaces for hot stamping, forging, melting, tool hardening furnaces, and tinning baths are shown.

A full range of hard and soft soldering equipment, including several new special appliances, are also on view, as well as ventilators and filters for air raid shelters.

METROPOLITAN GAS METERS, LTD.—Ca. 512

On this stand is displayed a range of dry gas meters of ordinary and prepayment types. Since the Fair of last year improvements have been made to both the "Metwin" consumer's optional and the "Duplex" convertible prepayment meters, and samples of these are being demonstrated. Large meters of 1,200 cu.ft. and 1,800 cu.ft. per hour are also exhibited.

The rentals collecting device introduced a year ago, and now capable of being applied to varying types and sizes of cash boxes is on view. In addition, the "Duplex" lighting controller adapted for use with automatic igniter appliances is exhibited.

EWART & SON, LTD.

Ca. 207

Messrs. Ewart & Son, Ltd., are exhibiting the new "Empire" multi-point and the No. 25 and No. 30 single-point gas water heaters. The "Empire" supplies all the hot water needed for the modern household to bath, basin, or other taps, without previous storage. Heating capacity is 3½ gallons per minute raised 40° F. Embodying the very latest improvements which include an automatic lighter, safety pilot light, and gas governor, without extra charge, it is warranted by a manufacturing experience extending over a century. Easily accessible for cleaning or adjustment or repair, the outer casing can be quickly removed without displacing the vent or baffler. The exterior is of best white porcelain enamel, sturdily built for lasting service.

The No. 25 (2½ gallons per minute) and the No. 30 (3 gallons per minute) bath water heaters, of sealed pattern, with improved interlocking gas and water taps, substantially constructed of best British materials, provide a reliable and efficient service for bath and domestic uses.

GROSVENOR UTILITIES, LTD. (Basol, Ltd.)

Ca. 707

Formerly known as Turner Mausden & Co., Ltd., in association with Grosvenor Utilities, Ltd., Basol, Ltd., are now entering their fourth year as the manufacturers and suppliers of "Basol" non-caustic degreasants.

"Basol" has universal application in all works departments of every industry, and owing to its harmless but highly efficient degreasing and decarbonizing properties, has established itself well as a solvent.

Basol, Ltd., are showing their various products, including "Paraklene," their new substitute for paraffin.

Demonstrations are proceeding during the whole period of the Fair.

THE MATERIAL FOR
GAS METERS
BALDWINS'
STAFFORDSHIRE BEST CHARCOAL
TINNED SHEETS AND TINPLATES
HEAVILY COATED WITH PURE TIN

ALL STAFFORDSHIRE PLATES are Tinned by a special process, peculiar to BALDWINS LIMITED, which ensures a solid, thoroughly even coating, and a real amalgamation between the Steel and the Tin.

Makers of the famous

COOKLEY

Known throughout the World as the finest Tinned Sheet produced

Also makers of the following well-known Brands:—

"WILDEN" **"ARLEY"**
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TURNERS ASBESTOS CEMENT COMPANY

(Branch of Turner & Newall, Ltd.)

Ca. 202, 301

In response to many requests Turners Asbestos Cement Company (Branch of Turner & Newall, Ltd.) have decided to exhibit once again their strikingly original stand. The gigantic T.A.C. monogram created great interest at the Building Exhibition and the Public Health Exhibition, 1938. At the Fair it is being used for a comprehensive display of asbestos-cement products from the very wide range of roofings manufactured in this material, through the range of "Turnall" decorative materials, "Everite" asbestos-cement moulded goods, rainwater, soil, flue and pressure pipes, to the "Sindanyo" and "Siluminite" asbestos electrical insulating materials. A special section is again devoted to the application of asbestos-cement materials from an Air Raid Precaution point of view. Those who would keep abreast with the newest in asbestos-cement building products will be repaid by a visit to this exhibit.

WESTWOOD & WRIGHTS, LTD.

Ca. 610

The chief exhibit of Messrs. Westwood & Wrights, Ltd., consists of various types of W. & W. patent gas valves, including 1¼ in. to 4 in. service valves in different forms; a skeleton working valve and other separate parts clearly showing the internal construction. This valve, now so very well known throughout the Industry, embodying as its principle the permanent protection of the working faces and external lubrication of same, thus ensuring a tight valve even after long periods in the open position. A special grade of lubricant has recently been adopted, enabling efficient lubrication to be possible, even up to temperatures as high as 300° C., and this makes the valve particularly suitable for furnace and producer gases, for which a valve embodying special protection for operating gear has been designed.

One of the firm's valves.

Most of the firm's other activities can only be covered by illustrations and photographs, including gasholders (spiral and guide-framed), purifiers, washers, scrubbers, condensers, retort bench ironwork, structural steelwork, riveted and welded mild steel pipes and specials, &c.

STOVES, LTD.

Ca. 605

The present-day vogue for the cabinet type of gas cooker with hinged cover top is exemplified by the various streamline "Newhome" cookers included in this interesting display. The alternative finishes consisting of french grey mottled porcelain enamel with white door panel and white or grey mottled cover top, self-colour green and cream, and black and white, are both artistic and attractive.

Hotplates with either two or three boiling burners and grill, and two-oven sizes are represented in the samples exhibited. The adjustable plate shelf, or plate rack, the large plain door with domed panel and concealed hinges, the enamelled oven runners and ingenious grid shelf stop studs, and the smooth plain surfaces with rounded corners, are all notable features of the streamline "Newhome" cookers, being shown at the B.I.F. for the first time. The "Bakerloo" and "Grange" are also being exhibited as representative types of high-grade cookers.

The advantages of the "Duex" grill-boil burner with patented circular grill, which is featured in a special unit display, cannot be too strongly emphasized. Its adaptability for "either high speed grilling or boiling" raises the standard of performance to the highest degree. The "Duex" is supplied as standard with all this firm's cookers and "Argyll" hotplates, and is an exclusive "Rainhill" production of Stoves, Ltd.

The range of "Argyll" hotplates merits special mention for utility in rapid boiling and grilling, and their position is firmly established as small compact gas appliances. The fires and heaters to be seen include the "Supervector" panel heater, "Silo-Matchless" gas fires, and portable heaters such as the "Ravec," "Portal," and "Rayflex."

The "Newhome" Cooker.

The whole display leaves an impression of modernity and a policy of progress to which the evolution of these pleasing streamline designs and latest refinements are due.

OXLEY ENGINEERING COMPANY, LTD.

Ca. 713.

The Oxley Engineering Company, Ltd., are showing several interesting features. This firm specializes in the erection of arc-welded purifiers, spiral-guided gasholders, and other gas-works plant, and they have also carried out important contracts in this country and abroad for the erection of arc-welded storage tanks up to 152 ft. 6 in. diameter.

In addition to numerous photographs and illuminated transparencies, there is a working model of an arc-welded spiral-guided gasholder constructed on the "Hollis" patented system. Working models of "Hollis" patent self-adjusting and self-lubricating rollers and carriages as fitted to their spiral-guided gasholders are also exhibited, together with a model of their patented overflow and return ducts which prevent external flooding, gas blowing, and oil troubles.

In connexion with purifier construction, two "Hollis" patents may be seen; these are a leak detector and fastener, and a working model of a "Quick-Grip" fastener. This fastener is also suitable for low-pressure vessels other than purifiers. Other exhibits are samples of homogeneous lead coating and sprayed limpet asbestos. Welded test pieces will also be on view.

Our readers will recall that quite recently this firm completed the erection of an arc-welded four-lift spiral-guided gasholder at Sale for the Stretford and District Gas Board, the capacity of which is 2 million cu.ft., the steel tank being 152 ft. 6 in. diameter by 33 ft. deep. They are about to commence the erection of four arc-welded mild steel purifier boxes, 55 ft. by 30 ft. by 12 ft. deep and two catch boxes, 30 ft. by 30 ft. by 12 ft. deep, complete with supporting structure and oxide handling plant, for the Hemsworth and United Kingdom Coke Oven Company, Ltd. The boxes are fitted with 24 in. diameter valves and connexions.

Another interesting job which has just been completed is the erection of three arc-welded storage tanks at Los Bajos (B.W.I.). The largest of these tanks, which was 114 ft. 6 in. diameter by 35 ft. 4 in. deep, was originally a riveted tank, and they successfully cut this down and erected it, all-welded, on a site some 30 miles away from the original foundations. The other two tanks were 80 ft. diameter by 42 ft. 1½ in. deep, and all three were fitted with "Wiggins" pontoon floating roofs.

EMSCOTE FOUNDRY CO., LTD.

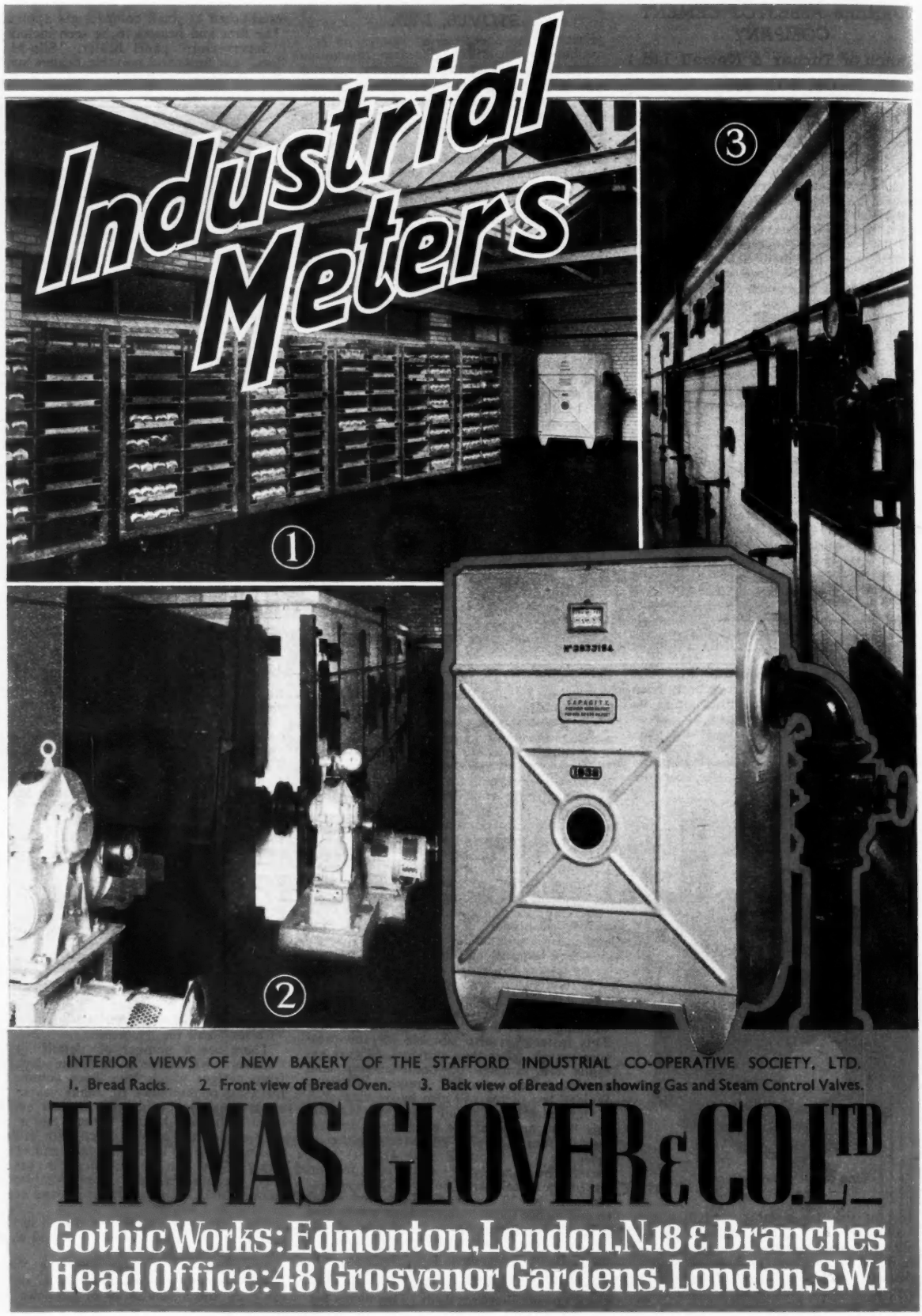
Ca. 208, 305

Two entirely new series of cookers are being shown on the stand of Emscote Foundry Company, Ltd., this year—namely, the "Certes" and the "Coronet."

There are a number of details in the "Certes" which are a complete departure from designs which have been common to this class of appliance for many years. The cookers are in the high-grade class and are fitted with three boiling burners and a grill, and, as desired, can be fitted with either a folding down lid or a plate rack and splashplate. They can be produced in mottled grey vitreous enamel, or in combination colours: Black and white, green and cream, or blue and white.

The "Coronet" cooker is shown in three sizes, varying from two burners and a grill to five burners and a grill.

The firm are showing also the "Neocoke" vitreous-enamelled domestic boilers, gas fires, and a new series of gas-coke fires.



INTERIOR VIEWS OF NEW BAKERY OF THE STAFFORD INDUSTRIAL CO-OPERATIVE SOCIETY, LTD.
1. Bread Racks. 2. Front view of Bread Oven. 3. Back view of Bread Oven showing Gas and Steam Control Valves.

THOMAS GLOVER & CO. LTD

Gothic Works: Edmonton, London, N.18 & Branches
Head Office: 48 Grosvenor Gardens, London, S.W.1

Interesting Exhibits Outside the Gas Section

The displays referred to in the following pages, though not in the Gas Industry Section of the B.I.F., will prove of interest to our readers.

CELLACTITE AND BRITISH URALITE, LTD.

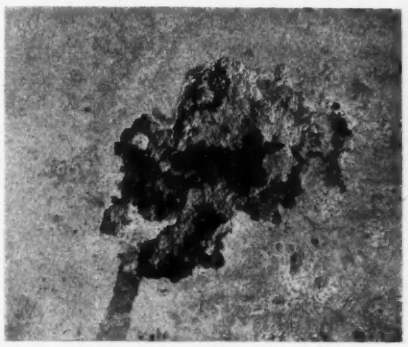
B. 522, 623

A full range of their several building, gas flue, and ducting products, the popularity of which increases annually and has been gained by proof of quality and service in severest conditions throughout the world, is exhibited by Cellactite and British Uralite, Ltd.

Asbestos protected metal in the form of roofing and roof ventilators is displayed in service size and application. Uniformly and guaranteed permanence of "Cellactite" is of real assistance to those planning complete roofs. Data on performance of ventilators in a variety of atmospheric and other conditions are available to all those interested.

Incorrosible "Urastone" pipe and fittings, used by gas undertakings and makers of heating appliances throughout the world, are prominently shown, together with interesting examples of the material as extensively used for fume-ducting, air-conditioning plants, &c.

The new "Kimoloboard" wallboard composed of asbestos and diatomaceous earth, and representing (the firm claim) real technical advance in this trade, is included in this exhibit. "Kimoloboard" is a really fireproof product, having the B.S.I. status for incombustibility, and a combination of other advantages satisfying the most exacting requirements of the architect and builder. Topical usefulness of "Kimoloboard" concerns A.R.P. work, for the material has by public demonstration been proved to stop passage of burning "Thermite," an incendiary which melts through steel practically on contact. "Kimoloboard" stops "Thermite," and is, therefore, capable of confining the fire to its source. Full information on this A.R.P. safety application to roof chambers, and elsewhere in buildings, will be available on request.



"Kimoloboard" after a Thermite incendiary bomb had burnt itself out; note only slight surface impingement and deposits of matter.

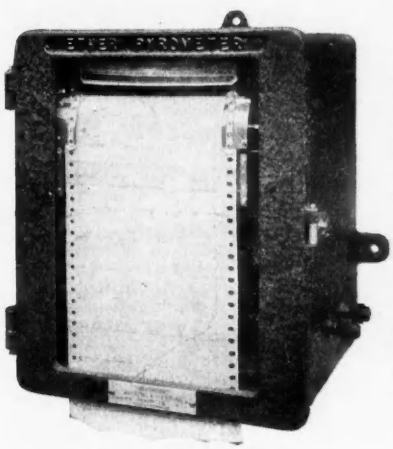
"Asbestone," asbestos cement in the form of flat corrugated sheets and various sundries, is also to be seen on this stand. British-made asbestos cement is the best in the world, and, as one of the pioneer manufacturers, this firm's product is claimed to be second to none.

The old original and genuine product of "Uralite" is also shown. For upwards of thirty years "Uralite" has been a name synonymous with fire safety.

ETHER, LTD.

Cb. 716

The past year has seen tremendous activity in regard to the automatic temperature control of gas-fired furnaces.



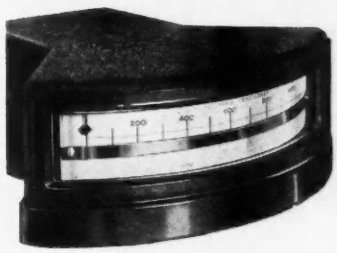
Ether "Indicorder."

The Ether "Indicorder" continuous chart recording and controlling pyrometer has done much to achieve this result. Models are shown demonstrating the simplicity and great accuracy of the controlling system; the robust construction of the mechanism; and the advantages of the combined recording and controlling unit which are claimed for a thermo-electric type of instrument.

The "Ether" series of indicating pyrometers used on hand-controlled furnaces are also shown in improved forms. The "Edgewise" type of indicator—the largest type—has a scale 12 in. long, and is stated to be the largest scaled instrument at present in world production. The "Ether" automatic electrically-operated gas valve, used as protective devices and also in conjunction with automatic controllers, are made in solenoid and motor driven types, also as pressure, air, and water operated in sizes up to 6 in. b.s.p. The "Ether" disappearing filament optical pyrometer is of completely new design, and embraces many improvements such as rack and pinion focusing, self-contained colour screen, compact form and improved galvanometer position, enabling accurate and rapid readings to be obtained. This instrument covers temperature ranges from 800° to 2,400° C. and upwards, and the improvements embodied in the new design render it extremely convenient to use and handy for carrying.

The "Ether" portable checking pyrometer in polished walnut case is also shown. This instrument has been designed for checking production instruments on aircraft work as required by the regulations. This instrument is fitted with every refinement to ensure high accuracy combined with robustness.

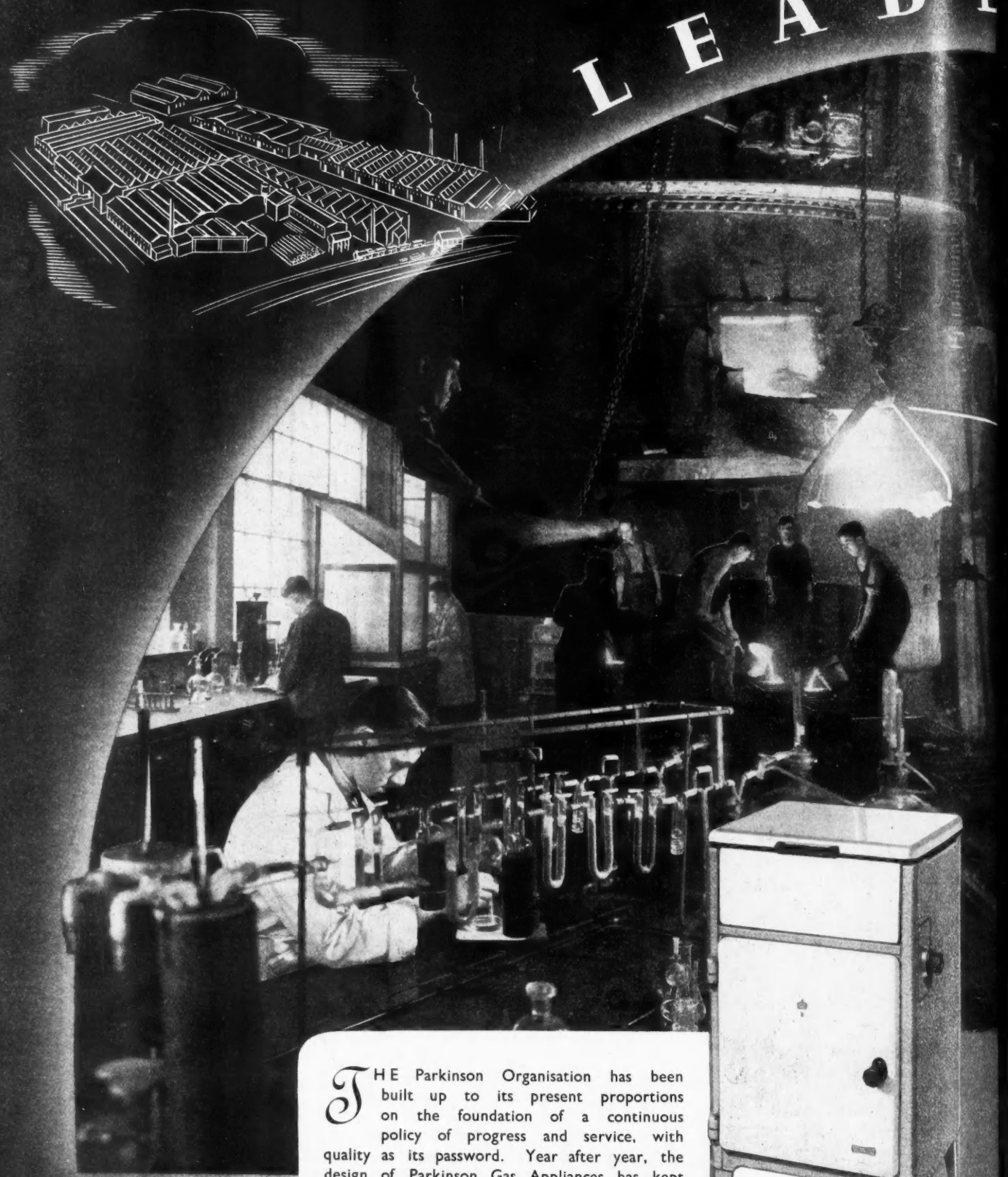
The "Ether" range caters for all temperatures between 400° to over 2,000° C. Instruments are also exhibited of the vapour pressure and mercury-in-steel types, as well as the "Almetal" bi-metallic dial thermometers; these instruments cover the temperature range from zero to 500° C.



Ether "Edgewise" Indicator.

ROZALEX, LTD.—Cb. 722

The importance of preventing the entry of industrial substances and dirt into the skin is obvious; they find their way deep into the pores and remain untouched by ordinary cleaning methods. This clogging impairs the correct functioning of the pores, is frequently followed by sepsis, and invites an attack of dermatitis. "Rozalex" is stated by the manufacturers, Rozalex, Ltd., to have behind it the test of years as the proved barrier against dermatitis. "Rozalex," it is claimed, has only to be applied before work to prevent the entry of harmful substances. Removal of the dirt from the surface then becomes a very simple matter by an ordinary wash with soap and water. "Rozalex" is non-caustic and free from gritty matter, reduces washing time to a minimum, and is economical in use. It is stated to be recommended by the medical profession and insurance companies. On the Company's stand there is a continuous demonstration.



THE Parkinson Organisation has been built up to its present proportions on the foundation of a continuous policy of progress and service, with quality as its password. Year after year, the design of Parkinson Gas Appliances has kept pace with modern times, and leadership in design has been achieved. The transformation of the gas cooker to harmonise with the modern kitchen interior was pioneered by the Parkinson Organisation with the introduction of the "RENOWN."

The CROWN

B ★ I ★ F 1939 Stand No. C[a]500 (Gas Section)

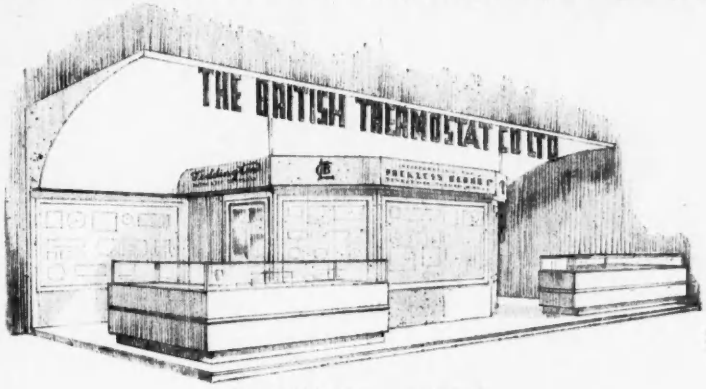
BRITISH THERMOSTAT COMPANY, LTD.

Cb. 700.

The British Thermostat Company's stand is on the site in the Electrical Section which the firm have occupied for some years past.

The stand has been designed to afford a setting for a number of panels on which are mounted examples of "Teddington" automatic controls for heating, air-conditioning, refrigerating, and industrial installations. Smaller exhibits, such as seamless, metallic bellows and small parts are displayed under the glass-topped counters, while a commodious office is provided so that the majority of enquiries received at the Fair can be answered by post direct from the stand.

A comprehensive range of room thermostats and duct thermostats, humidistats, magnetic and motorized valves, and motor-operated damper units is shown, a special feature of which is the new Model HS "Teddington" humidistat. This incorporates many improvements over the original HH model; it is an automatic switch which responds to changes in relative humidity, irrespective of the prevailing temperature, and can therefore be employed for the direct control of humidifying and drying units.



The British Thermostat Stand.

Another section is truly representative of modern practice in refrigeration control, including thermostats for use in every class of installation from the small domestic cabinet to the largest control storage plant; also shown the low-pressure controls, pressure-operated and thermostatic expansion valves, pressure-operated water valves, and a large selection of instruments and accessories such as dial thermometers, pressure gauges and stop valves, strainers, and driers. On one panel a demonstration is arranged to show the "Teddington" thermostatic expansion valve in operation.

In the furnace controls section there is shown for the first time the "Teddington" controlling pyrometer, manufactured by Teddington Controls, Ltd., an associate Company. This instrument is claimed to be the simplest controlling pyrometer hitherto produced. It is suitable for a wide range of industrial applications. This instrument will be demonstrated under working conditions.

Specimens of seamless metallic bellows, in various materials, are displayed, together with a selection of mechanisms in which they are employed. These bellows are, of course, used as the power elements in vapour-pressure thermostats, pressure-stats, and other pressure-operated mechanisms. They are also widely employed as shaft seals, several examples of which will be on view including glands for compressors, water pumps, the rear axle of motor vehicles, and other enclosures.

BRITISH THOMSON-HOUSTON COMPANY, LTD.

Cb. 404, 505

The stand of The British Thomson-Houston Company, Ltd., has been specially designed to exhibit in the clearest possible manner the latest developments in lamps and the science of illumination, a field in which the Company has for many years held a very high place. Of approximately circular shape, the general colour scheme being black and white, this stand carries for its exterior *décor* many vertical columns so constructed as to throw the light from concealed lighting fittings upon recessed panels which contain a comprehensive range of lamps in groups. The columns are glazed at each side and internally illuminated, the effect being modern and striking without offending the critical eye by too bizarre a departure from normal artistic standards. The interior of the stand, while serving as an office and meeting place in the usual way, has its own ingenious and arresting display. On the walls are photographic transparencies of various lighting installations, with recesses in which are seen the chokes, control gear, and other appliances pertaining to each particular unit, thus linking up usefully and informatively with the exterior demonstrations of street, flood, and industrial lighting. The central table is surmounted by artificial flowers treated with fluorescent media which glow delicately in the rays from hidden ultra-violet lamps.

The complete stand is an excellent presentation in compact form of the wide range of the B.T.H. Company's work in the science of modern electric illumination, and its originality will certainly attract great attention.

BABCOCK & WILCOX., LTD.

D. 401/300.

Occupying again the same site, Messrs. Babcock & Wilcox, Ltd., are showing a number of new exhibits and also some which have been shown before but which are nevertheless of interest. The type "E" mill is one of the new products which is being shown to the public for the first time. This design of mill is installed or is being installed in a number of British Power Stations. In addition, a number of installations abroad are in hand. Power consumption is claimed to have been reduced by about 50% compared with practically any other pulverizer on the market. It is an application of the ball bearing principle to grinding.

The Research Department exhibit is a new feature, designed not only to show the importance which the firm place on research work, but also to demonstrate some of the results which have been achieved by it.

A new publication, "Babcock & Wilcox Automatic Power Driven Soot Blowers," will be available at the Fair.

Owing to the wide interest and appreciation shown in the Babcock-Erith flue type stoker, both for land and marine work, the firm are again showing the same exhibit as was shown at the Engineering and Marine Exhibition, Olympia, 1937, British Industries Fair, Birmingham, 1938, and the Empire Exhibition, Glasgow, 1938.

Edwin Danks & Co. (Oldbury), Ltd., show typical examples of their products, including a section of electrically welded gas separator, together with heads and blocks; also a large heat exchanger: boiler drum ends, &c.

The Calorizing Corporation of Great Britain, Ltd., will be exhibiting a few typical manufactures in calorized mild steel and calmet nickel chrome heat resisting alloy, comprising heat treatment containers for case-hardening, cyanide, salt and lead hardening, and annealing, together with pyrometer sheaths, soot blower tubes and nozzles, and superheater supports.

The Clarkson Thimble Tube Boiler Co., Ltd., have on view a collection of photographs and drawings describing the Clarkson concentric thimble-tube boiler for use as composite oil-fired and exhaust gas boilers and as vertical two-pass boilers for ordinary &c.

THE CHESTERFIELD TUBE COMPANY, LTD.

D. 508, 609

The exhibit of the Chesterfield Tube Company, Ltd., consists of cold drawn weldless steel steam pipes for high-pressure steam installations, weldless steel headers for boilers and superheaters, and tubes manufactured from the latest corrosion and heat resisting alloy steels.

Weldless steel cylinders, for the storage of permanent and liquefiable gases are also displayed, and these exhibits comprise cylinders ranging from large storage bottles manufactured for capacities of over 6,000 cu.ft. to the small medical and aircraft cylinders weighing only a few pounds. Another interesting exhibit to be seen on this Company's stand is a weldless steel hollow measuring 29 in. internal diameter by 3 in. thick by 17 ft. long., manufactured by the new plant, which is claimed to be of a size and power greater than any other of a similar kind operating in the world, recently installed at the Company's Works.

STEWARTS & LLOYDS, LTD.

D. 400, 501

Stewarts & Lloyds, Ltd., have a large stand, which is representative of their manufactures of steel pipes ranging in size from ⅛ in. to 72 in. diameter. Their comprehensive display embraces tubes and fittings in gas, water, and steam qualities; steel pipes for water, gas, sewage, and air mains; tubes and accessories for high-pressure steam power plant and also for low-pressure installations; oil country tubular goods; colliery tubular equipment; boiler tubes, &c.

Two complementary exhibits are (1) a large variety of pipe joints from which it can be seen that there is a suitable type for any steel pipe installation whatever, and (2) a collection of modern protective linings and coverings supplied for the varying conditions of service. The pipe joints include several types of spigot and socket welded and loose flange joints, as well as "Victaulic" joints and "Johnson" couplings. The "Victaulic" exhibits include a sample of the recently developed ring type joint for the 15 in. high-pressure pipes being supplied at present for the Bulawayo water supply scheme.

A corrugated double bend with flanged "Dawson" joints and a scale model of the pipework connecting steam receivers to turbo-generators indicates the use of the Dawson joint for high-pressure steam pipe installations.

The employment of tubes for fabricated products is increasing, and there are two tubular steel road trestles shown on the stand. These trestles can be closed up when not in use, and, therefore, while they are claimed to serve their purpose better than wooden trestles they also take up less room when being transported from place to place. Decorative panels for fencing purposes and coils forming lamp standards also indicate the variety of articles suitable for fabrication from tubes.

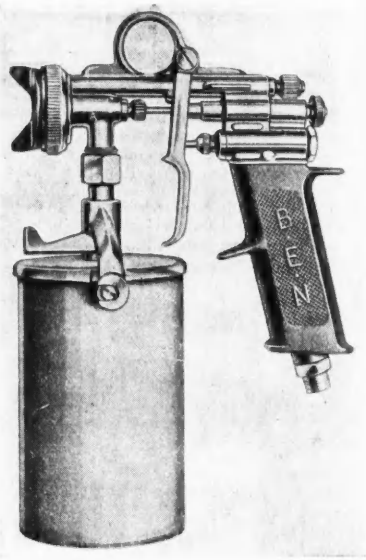
B.E.N. PATENTS, LTD.

B. 627.

B.E.N. Patents, Ltd., are showing an extensive range of their products, including a representative range of B.E.N. spray painting machines and equipment, comprising spray guns, paint containers, air cleaners, and exhaust fans. The spraying machines include fixed and portable plants for interior and exterior painting and decorating, as well as for industrial finishing work. Specimens of B.E.N. single and two-stage air compressors of different capacities and suitable for working pressures up to 200 lb. per sq.in. are shown together with self-contained motor driven compressor sets equipped with air receivers and automatic switchgear.

Up-to-date B.E.N. garage service equipment embrace fixed and portable garage compressors, air fittings, flex-shaft polishing machines, pressure greasers, hydraulic jacks, axle stands, &c.

B.E.N. anti-set-off syraying machines and equipment for use in the printing trade, including a portable self-contained unit mounted on a steel base with rubber tyred castor steering wheels, complete with compressor, receiver, spray gun, and full equipment, as well as a pedestal outfit for operating from a central compressed air system.



The B.E.N. "Varispray" Gun.

A striking feature of the stand is an illuminated world map, mechanically operated, showing the principal offices and works at home and abroad, which is supplemented by a diorama illustrating the transportation of tubes throughout the world.

BRAY BURNERS

We show here some patterns particularly suitable for maintenance work.

The construction is of the most simple and robust character, and the burners are as efficient as research and modern manufacturing methods can make them.

The globe holders and deflectors are made from heavy gauge aluminium, and all other metal parts are made from the solid bar or solid drawn tubing.

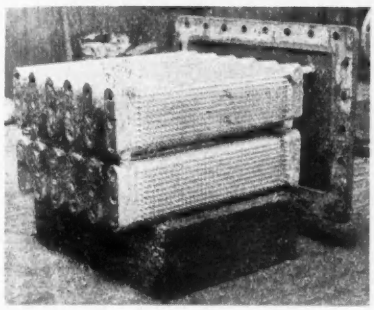
The adjustment of both the gas and air supply can be simply effected by using a coin or screwdriver.

PARTICULARS OF THESE AND OTHER PATTERNS ARE GIVEN IN CATALOGUE No. 187 — *please apply for copy to*

GEO. BRAY & Co LTD.
LEEDS 2

NEWTON CHAMBERS & CO., LTD.—D. 502, 603

A comprehensive exhibit has as usual been arranged by Newton Chambers & Co., Ltd. A "Newton" needle air heater of a type suitable for working in conjunction with any type of steam boiler is exhibited. The particular unit shown illustrates how the air heater may be mounted in the same setting as the economizer. The "Needle" air heater is built up from unit elements and can be made of any desired height or width to suit local conditions. The elements are also made in various lengths ranging from 2 ft. 10 in. to 8 ft. 8 in., which



Unit of Purifier Gas Preheater.

enables the draught loss thrown by the heater to be varied as required. The heaters may be incorporated in the boiler proper or may be built as separate units behind the boilers. The elements are cast from special iron, which is heat resisting and eliminates all corrosion troubles.

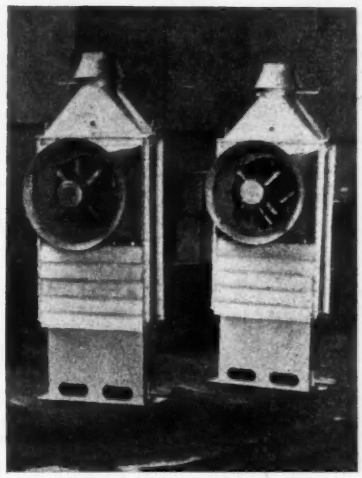
Coke-fired "Newcotherms" are made in three standard sizes, the smallest having an output of 100,000 B.Th.U. per hour and the largest 320,000 B.Th.U. per hour. The models exhibited are sizes Nos. 1 and 2.

The gas-fired "Newcotherm" is a unit heater which has been designed for the heating of large workshops and factories in accordance with new regulations. The heaters are of exceptionally robust construction, and are arranged for wall or stanchion mounting. The units exhibited are not actually on the stand but are fixed on the four roof supporting columns adjacent to the stand. The heaters are made in four standard sizes, the smallest having an output of 100,000 B.Th.U. per hour and the largest 450,000 B.Th.U. per hour. The units are supplied with or without automatic temperature controls; the controls included ensure that in the event of an electric power failure and consequently a fan stoppage, the gas is cut off to prevent overheating of the elements. This control also provides, of course, for regulating the gas supply to ensure an indoor temperature desired being maintained.

The heat exchange elements used in the construction of the heaters are of the well-known needle type, and are cast from metal which is suitable for flue gas temperatures of 850° C. This type of element ensures long life and eliminates all corrosion troubles.

A "Newton" needle recuperator is shown arranged for use with a furnace, and this particular one is shown arranged in a horizontal chimney flue. "Newton" needle recuperators are built up from single elements and may be made to any desired size and shape to suit local conditions. The recuperator shown may be inserted in any existing flue and may be removed *en bloc* as required. In addition to the vertical type shown, the elements can be erected horizontally either above the furnace or at the sides. The needle recuperator is used for preheating both gas and air required for combustion on any type of furnace.

Two types of gas heaters are shown, one for connecting into the gas main and the other for bolting direct on to the side of the purifier box. Both types are of cast-iron construction throughout the heating elements being of the well-known Newton "Needle" design. It is customary to use the first type as a primary heater; that is a heater which is capable of raising the temperature of the whole gas supply from, say, 40° F. up to 90° F. The second type is used for adding additional heat to the gas to compensate for the losses which occur



Gas-Fired "Newcotherms."

when the gas is passing through the various boxes. This type of heater is capable of raising the temperature of the gas from, say, 70° F. to 90° F. The heaters are of compact design and offer a minimum of resistance to the flow of gas.

The heating elements are of robust construction and may be used with steam pressures up to 200 lb. per sq.in.

CHASESIDE ENGINEERING COMPANY, LTD.

D. 723

Additions to the standard lines of the Chaseside Engineering Company, Ltd., to be seen on their stand will be the "Demon" shovel with a valuable new counting device, and the 1939 "Economy" model 3 cu.yd. dumper.

"Chaseside" mobile shovels shift and load up to about 40 tons an hour of any material from quarried stone to stiff tarmacadam.

The "Demon" shovel is a special variation for gas undertakings. It can actually pick up ¾ cu.yd. of coke at a time, and discharge it at any height up to 11 ft. 3 in. The counting device automatically checks the quantities handled. All these shovels, though reasonably light, are very strong and quite stable. They are highly manœuvreable, easily operated, and virtually foolproof.

The 3 cu.yd. dumper is the final evolution of many years' experience in this field. Despite its big capacity it needs only 6 pints of No. 3 petrol per hour. It has nearly 2 ft. ground clearance, and its engine develops 52 B.H.P.

By a combination of low centre of gravity and wide wheel base it is rendered quite stable even over the roughest surfaces. Strength has been particularly attended to, especially in such important places as the back axle, which is of massive construction, and exceptionally strong brakes are provided.

GITTINGS & HILLS, LTD.

B. 324

Important strides have been made during the past year in the wide range of industrial finishes manufactured by Gittings & Hills, Ltd.

"Rockhard" finishes comprise several distinct types each for its own particular purpose, and considerable improvements have been effected recently, particularly in the case of heat-resisting materials for fire fronts and other heating appliances. The newest types require only ten minutes stoving at 250° F. and are capable of withstanding high temperatures for long periods; while the most attractive results can easily and speedily be obtained. Water resistant types have also been developed to a high degree, while the hardness and wearing qualities of these materials render them suitable for many purposes where more expensive finishes were once employed. "Rockhard" materials also include types of special toughness and flexibility for use on articles which habitually meet with rough usage. All these various types are available in a wide range of colours, giving unlimited scope for the production of artistic effects.

The new factory recently erected to cope with the rapidly increasing output of these materials is now in production. Particularly far-reaching developments have taken place in the case of dipping cellulose. Of special interest are "Lustreloid" cellulose white enamels for bathroom fittings, in which improvements have been effected.

Other finishes exhibited include dipping cellulose for wood handles and other woodware, furniture and toys, wood fillers, and car body finishes.

"Metalard" tool and machinery enamels are claimed to be oilproof, and capable of withstanding hard wear; the air drying time is under four hours. They are shown on various small articles demonstrating their wide applications, including garden tools, mowers, &c. A speciality in this line is an air drying machinery enamel, drying in less than half an hour, which entirely resists caustic soda, screwing oil, mineral acids, and other strong alkalies.

"Amsuline" is an anti-corrosive coating, providing an economical and reliable finish for the painting of steelwork and all metal surfaces, being proof against the sulphurous fumes and other acid-laden atmospheres. It is also capable of standing severe climatic conditions. It is used by the L.C.C. and other public bodies.

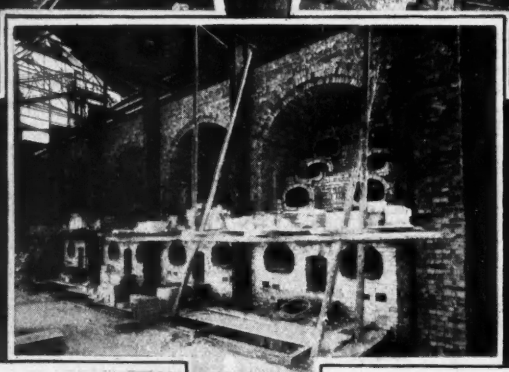
"Fouramel" liquid wall glaze is specially suitable for power houses, offices, showrooms, &c., being of a hard wearing nature, and easy and economical to apply. It provides a bright and lasting finish, capable of being "hosed" or washed down; at the same time, reflecting the maximum amount of light. It is non-poisonous.

It is especially interesting to note that most of the articles exhibited on the firm's stand have been produced and finished under ordinary production conditions by their customers.

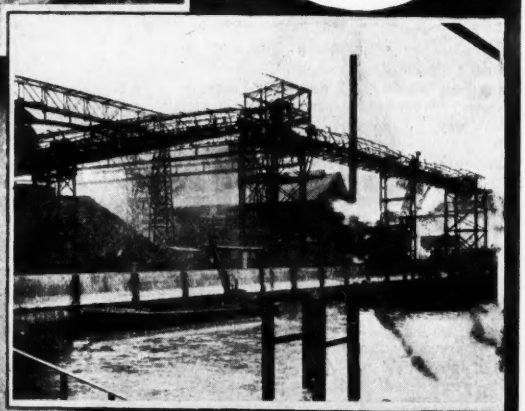
GIBBONS

GAS AND CONSTRUCTIONAL ENGINEERS

MODERN COAL CARBONISING PLANTS
INDUSTRIAL AND MANUFACTURING PLANT
CONSTRUCTIONAL STEELWORK
FACTORY BUILDINGS



COAL AND COKE HANDLING PLANTS
STORAGE BUNKERS AND GRADING PLANTS
CHARGING AND DISCHARGING MACHINERY
REINFORCED CONCRETE FOUNDATIONS



GIBBONS BROS., LIMITED,

DIBDALE WORKS, DUDLEY

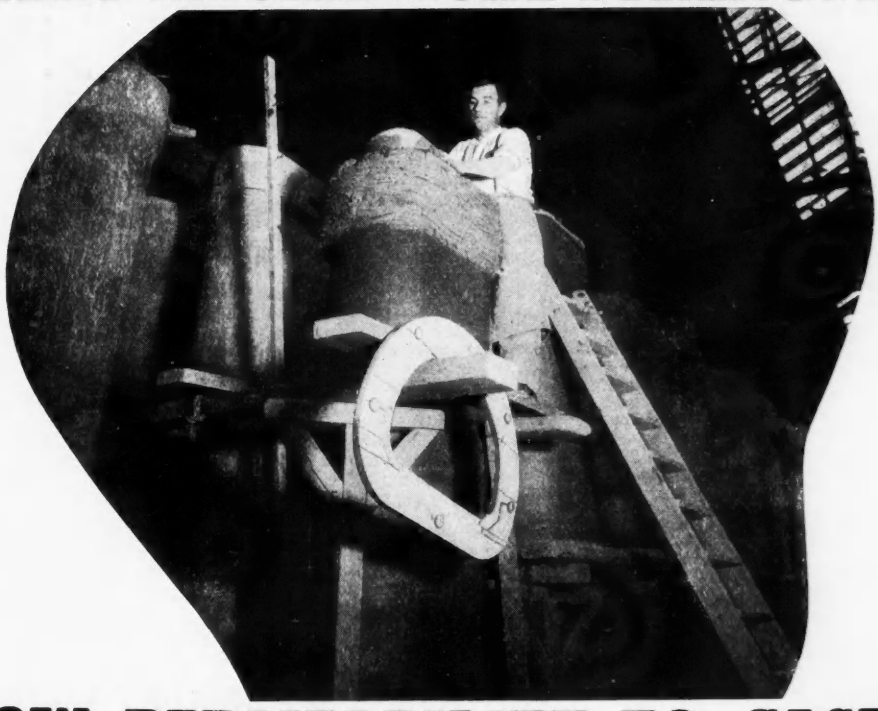
Telephone : DUDLEY 3141 (P.A.B.X.) Telegrams : "GIBBONS, LOWER GORNAL."

LONDON OFFICE: 151-4, PALACE CHAMBERS, WESTMINSTER, S.W.1

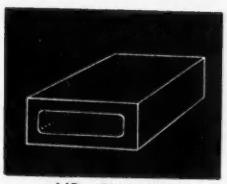
TELEPHONE : WHITEHALL 6417 – 8

We are exhibiting on STAND Ca 511, B.I.F, Birmingham,

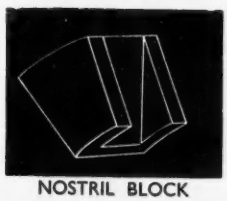
GREAT MECHANICAL STRENGTH



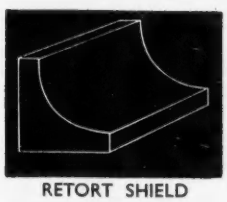
LOW PERMEABILITY TO GASES



AIR CHANNEL



NOSTRIL BLOCK



RETORT SHIELD

Siliceous Retorts (82/83% SiO_2).

Features of this material are great mechanical strength, smooth, hard surface skin and very low permeability to gases. Allied to these is the very high refractoriness under load figure, ensuring maintenance of shape under high temperature operating conditions. Siliceous material is also supplied in standard brick sizes and special shapes for coke oven construction and other positions involving long soaking heats. Also Fireclay Retorts, Silica Segmental Retorts.

GIBBONS (DUDLEY) LTD., Dept. 9, DIBDALE WORKS, DUDLEY

We are exhibiting on STAND Ca 511, B.I.F. Birmingham.

REFRACTORIES BY

GAS WORKS GIBBONS

BURRAY-WATSON

SELAS GAS AND ENGINEERING COMPANY, LTD.

Cb. 504, 605

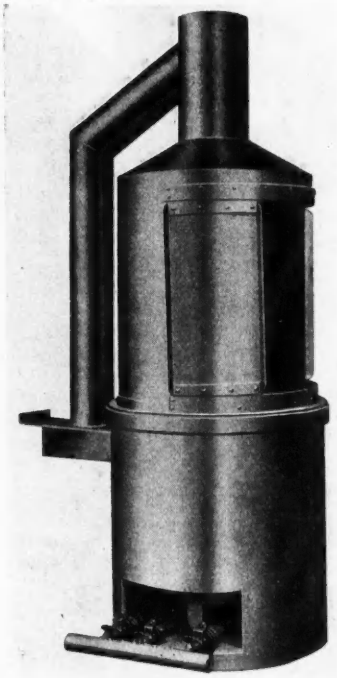
A complete range of their industrial gas equipment and appliances, the majority of which have been shown previously, is exhibited by the Selas Gas and Engineering Company, Ltd. The firm are including, however, three entirely new lines which are sure to evoke much interest. These are the G.L.C. laboratory crucible furnace, G.L.C. laboratory sand bath, and the Company's new type low-temperature salt bath furnace, of which we give an illustration.

The first of these three new lines, the G.L.C. crucible furnace is a modern and efficient appliance designed by the Watson House Industrial Centre; the furnace is manufactured by the Selas Company under licence. Its design and construction renders it capable of first class performance and results. The usual high standard finish gives a pleasing and attractive appearance. The furnace offers a simple and convenient means of performing routine laboratory operations, such as the ignition of precipitates, melting metal samples, trial and test heating on a small scale, and similar kinds of work. For all these purposes it is claimed to be far more satisfactory than the more common method of heating crucibles openly in naked flames, as it ensures positive heating at rapid rates, thereby using gas economically.

The G.L.C. gas-heated sand bath is a modern laboratory appliance also designed at the Watson House Industrial Centre. It is manufactured by Selas Company under special arrangement. Similar to all other G.L.C. industrial and laboratory gas equipment, the sand bath is of excellent design and construction to ensure efficient performance and results. The burner is fitted at one end of the bath for the express purpose of obtaining a temperature graduation, thus making it possible for work demanding different temperatures and rates of heating to be carried out at the same time.

A new range of gas-fired salt bath furnaces, for working temperatures up to 600° C., comprises four standard sizes. Optional accessories, such as furnace hoods, pyrometer equipment, and automatic temperature controllers, are supplied as standard fitments, when required. Each furnace consists of a substantial welded mild steel casing, lined with best quality refractory blocks forming combustion and heating chambers. A heavy cast iron ring, in which the pot is suspended, forms the furnace top plate. The pot is strongly made from welded steel plate, with flat bottom and thick suspension flange at top. A flue outlet with adjustable damper is provided. The furnaces are fired by "Selas" interlocking ring burners. Normally the burners are arranged for use with gas at ordinary low pressure, but can be supplied suitable for other gas systems. The burner is accommodated in a separate chamber at the base of the furnace, and fires through a cast-iron plate that ensures a controlled directional flow of secondary combustion air. Each furnace is built and despatched as a completely assembled unit, with all external surfaces finished with two coats of heat resisting aluminium paint.

The furnace hood is of steel construction and includes a pair of easily operated sliding doors, giving free access to the entire pot. Flue piping from the furnace for connexion into the hood outlet is included. These parts are finished with heat resisting aluminium paint.



"Selas" Low-Temperature Salt Bath Furnace.

CRANE, LTD.

D. 619.

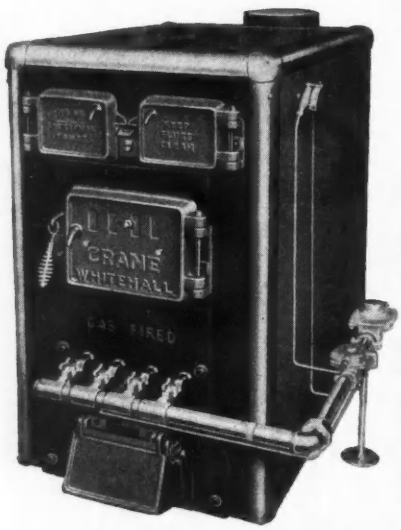
Several examples of their new and interesting boilers will be shown in Crane, Ltd.'s, 1939 exhibit. Outstanding among these is the "New Carlton" boiler, which the makers claim to be among the most attractive small heating boilers obtainable. Another newly-designed and efficient boiler for small hot water supply installations is the No. 00 "Ipswich" domestic boiler, which not only complies in every respect with the new British Standard Specification for Domestic Hot Water Boilers, but has an extremely good finish.

Other examples of "Crane" heating and hot water equipment are represented by a typical "Whitehall" central heating boiler, and various "Pall Mall," hospital, and concealed radiators.

On the industrial side a representative display of this Company's well-known malleable iron pipe fittings can be seen, all made in accordance with the latest British Standard Specifications. The range of valves manufactured at the Ipswich factory is again extended, and a selection illustrating the latest cast-iron gate valves of the outside screw and yoke type and non-rising stem type are exhibited.

The inverted open float type steam trap which the firm state is proving so popular for all-round service is again on show, together with gun metal gate valves and globe valves of various types. Particular attention is drawn to the D.46 globe valve for severe steam service at 250 lb. per sq.in. and 500° F.

Standard cast-iron flanged fittings also play a prominent part in the display.



"Crane" Gas-Fired Central Heating Boiler.

I.C.I. (METALS), LTD.

D. 302, 403

I.C.I. (Metals), Ltd., will show brass and other alloys of copper in the form of plates, sheet, strip, wire, rod, and sections; strip and sheet in copper and its alloys in various sizes and gauges, and a selection of rods and extruded sections which indicate the wide range of the Company's products.

A comprehensive display of tubes of various sizes and qualities will be staged on the stand. The condenser tubes for s.s. "Queen Mary," in cupro-nickel, were supplied by I.C.I. Metals, Ltd., and similar tubes are now being supplied for s.s. "Queen Elizabeth" by the same firm.

"Everdur," copper with the strength of steel, has made great headway since the last Fair, particularly in the manufacture of boilers, cylinders, storage tanks, and heaters, and for all purposes connected with water conveyance. Special attention will be drawn to the ease with which "Everdur" can be welded by oxy-acetylene, carbon arc, or resistance methods. Various forms of the material will be shown to demonstrate the properties of the alloy and its many potential applications.

"Kynal" aluminium alloy, suitable for the aircraft and other industries, will be shown in sheet, strip, rod, and tube. Aluminium and its alloys are becoming increasingly important, not only for aircraft manufacture but for transport generally. By making greater use of light alloys, railway, road transport, and marine engineers find that they can effect an overall reduction in weight with a concomitant increase in pay load.

Exhibits of interest to those engaged in constructional work will include expansion jointing which is finding a considerable outlet in concrete construction; "Kudampro," copper strip for damp-proof courses, and "Terrabond" serrated strip for terrazzo flooring.

WILLIAM ALLDAY & CO. LTD.

INCORPORATING

A. H. WILKES & CO.

HEAD OFFICES: **38A, PARADISE ST., BIRMINGHAM, 1**

BIF 1939 BIRMINGHAM ENGINEERING AND HARDWARE SECTION 20 FEB. - 3 MAR SEE OUR EXHIBIT

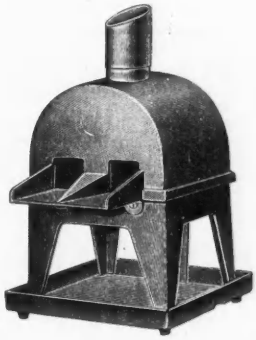
STAND NO. CA 609

We are exhibiting

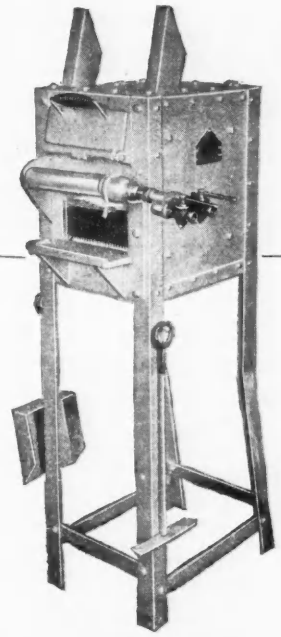
AUTOMATICALLY PROPORTIONED AIR-GAS MIXERS · AIR-GAS MIXERS—ALL TYPES · A.R.P. VENTILATORS AND FILTERS · BELLOWS · BLOWERS · BRASS BILLET HEATING FURNACES · BRAZING BLOWPIPES AND EQUIPMENT · BURNERS · FANS, BLOWING AND EXHAUSTING · FORGES.

FURNACES—VARIOUS TYPES · GAS BOOSTERS · HARDENING FURNACES · MELTING FURNACES · OIL-LESS BLOWERS · SMITHY EQUIPMENT · SOLDERING FURNACES · SOLDERING IRONS · SOFT METAL FURNACES · TINSMITH'S TOOLS AND EQUIPMENT · TOOL FURNACES.

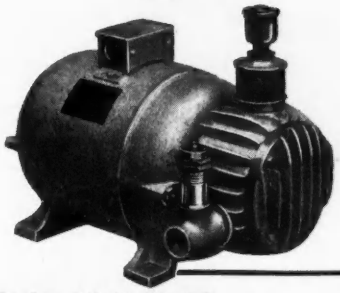
Universal Forge Furnace and Brazing Hearth.



Fast Production Soldering Stove.



Hot Brass Stamping Furnace.



Enclosed Drive Electric Blower for Gas or Air.

* On our stand at the British Industries Fair this year will be shown a comprehensive range of our specialised Gas Appliances. In particular brazing, soldering, tinning, hot brass stamping, forging, and burner, fan and blower equipment.

* Our name in the Gas Industry is synonymous with satisfaction, service, efficiency and, therefore, increased Industrial Sales.

* We look forward to meeting old friends and making new ones.

G. A. HARVEY & CO. (LONDON), LTD.

B. 327

Among the exhibitors at the Fair, Messrs. G. A. Harvey & Co. (London), Ltd., are an outstanding example of British enterprise in meeting the prevailing industrial and economic conditions at home and abroad. The extensions to their works which are still in progress afford both the steel furniture and heavy constructional department with increased facilities for manufacturing under modern conditions the manifold requirements so necessary to both the up-to-date factory and office, and will enable this Company to meet the ever-increasing demands being made upon them.

Apart from the supply of steel equipment for works and offices, Messrs. Harvey are particularly well equipped for the production of various types of specially designed plant in stainless steel, copper, Monel, nickel, &c., used in the chemical industry and kindred trades. The following items are only a few of the requirements they are called upon to manufacture from time to time: Vacuum drying, evaporating and distilling plants, fractionating towers, impregnating vessels, tar stills, pressure vessels, condensers, calandrias, jacketed pans, and storage tanks of all capacities.

The Harvey stand.

The extensive range of "Harco" perforated metals shown on this stand are of particular interest; the innumerable patterns needed for all kinds of sifting, filtering and grading such diverse materials as coal, stone, cereals, food products, chemicals, &c., convince one of the wide range of tools that this firm must possess. Slots 1½ in. by ⅜ in. wide through ⅞ in. thick steel to round holes ·015 in. diameter prove that the technical difficulties presented are easily overcome by the experience gained during a period of more than sixty-three years.

Another product for which Messrs. Harvey have a reputation second to none is woven wire cloth of all meshes and gauges and in all metals. "Harco-special Hard Quality" wire screens are claimed to give a far longer "life" in service under the most exacting conditions than ordinary mild steel wire screens. Clients are invited to make tests on their own materials and under prevailing working conditions. Other exhibits comprise pressed steel gutters in all sections and thicknesses, ventilators of all patterns designed to fill the requirements of architects and their clients in steel, zinc, or copper.

Of particular interest to all concerned with heat transfer problems are the "Harco Tapergil" gilled tubes displayed in long lengths of varied diameters and pitch of gills. Another exhibit at this stand of outstanding interest is "Harco" patent metalace. This is a recent achievement in wire-weaving. In ordinary weaving, whether of wire, cotton, or silk, the strands run at right angles to each other. By means of specially designed machinery, Messrs. G. A. Harvey have produced, additional strands are incorporated diagonally, with the result that woven designs of a very ornamental character are obtained. This new material combines durability with artistic effect and is most suitable for a variety of purposes, including radiator covers, ventilation panels, grilles, and stone guards for motor cars.

BRITISH VACUUM CLEANER AND ENGINEERING COMPANY, LTD.

Cb. 205

Among the industrial plant exhibited by the British Vacuum Cleaner and Engineering Company, Ltd., is the BO13 type vacuum cleaner driven by and directly coupled to a 6 b.h.p. electric motor, all mounted upon a heavy cast-iron baseplate with a C-type dust filter having an easily detachable dust bucket at the base. This plant is suitable for use in large buildings and institutions and is capable of accommodating three operators working simultaneously on open floors. The piping is carried throughout the building giving off hose connexion points for the attachment of the flexible cleaning hose wherever needed.

TO6/58 portable model vacuum cleaner driven by a 4 b.h.p. electric motor, complete with dust filter, all mounted on a heavy trolley with swing forecarriage and drawbar handle, is of very robust construction and is suitable for a great variety of work. It is a good cleaner for two operators on open floor work with 1½ bore hose or for three operators with 1¼ bore hose on upholstery cleaning largely used in factories and in garages for passenger transport vehicles. T6 model vacuum cleaner driven by a 1½ b.h.p. electric motor is used very largely in factories and passenger transport garages for cleaning upholstery; it is very fine one-operator equipment. Model T3 vacuum cleaner—the lightest industrial type—is very portable; it is driven by a built-in electric motor of the universal type and is most suitable for small factories and office cleaning. It is also extensively used on board ships for such purposes as cabin cleaning.

HILMOR, LTD.

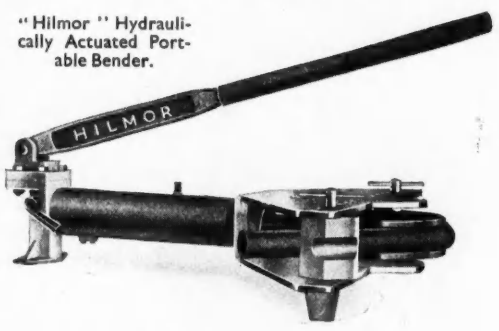
D. 101

Here is an opportunity of inspecting at first hand the large range of tube bending machines manufactured by Hilmor, Ltd.

This firm, which devotes its energies exclusively to the design and manufacture of tube bending machinery, is exhibiting bench fixture and portable, hand, power, and hydraulic benders, high-speed automatic machines for mass production work, and the well-known range of "GL." and "XL." portable benders which were developed specifically for the gas fitter using light gauge copper tube.

Among the machines being exhibited for the first time is the portable, hydraulically actuated bender for gas and steam barrel. This is a more compact version of the machine designed by Hilmor, Ltd., about five years ago, and has been developed to facilitate the bending of heavy barrel on site without resort to heat or filling. The machine is British throughout, is completely portable, and will handle from ¾ in. to 2 in. gas and steam barrel. Bends are produced free from distortion with little effort and, as an indication of the speed of operation, a 90° bend can be made in 2 in. steam pipe (cold) in approximately two minutes. This machine, which, incidentally, can be adapted to bend flat steel bar up to 2 in. by ½ in. and 2½ in. by ⅜ in., is being demonstrated daily during the Fair.

"Hilmor" Hydraulically Actuated Portable Bender.



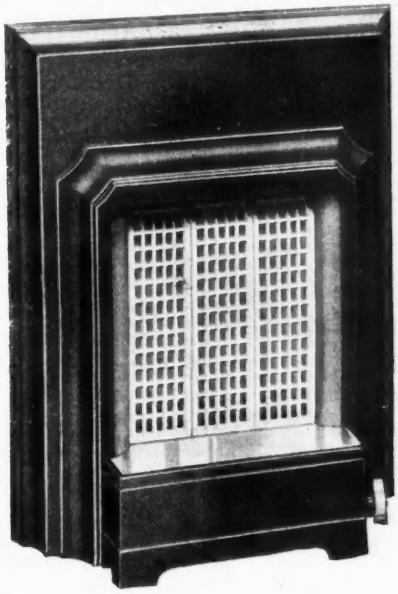
Important Announcement

The Portcullis Economy Control Tap is now incorporated in the following new

PORTCULLIS FIRES

"PICTON"	"SANDOWN SUPER"	"RAYELLO"	"WEXFORD"
Cast iron Fire available in 2 and 3 unit sizes.	*Cast iron Fire available in 2 and 3 unit sizes.*	*2 and 3 unit Panel type Fire. Simple Fixing.*	*Made in Rustless Steel. 3 unit size only.*

THE "Made for the Multitude" Lancelot with its Patent Economy Control Tap has so quickly established itself as a popular addition to the Portcullis range that we have incorporated this same Economy Control Tap in the four new Portcullis fires detailed above. As is already well-known, the "Lancelot" was designed and introduced to meet the Gas Industry's requirements for a fire constructed to the Portcullis standards of efficiency and appearance to sell to the mass market. In fact, a fire "Made for the Multitude."



BRATT COLBRAN
LIMITED
10, MORTIMER ST., LONDON, W.1

See them on Stand C.A. 604 B.I.F. Birmingham

FEBRUARY 20—MARCH 3

HANCOCK & CO. (ENGINEERS), LTD.

D. 628, 731

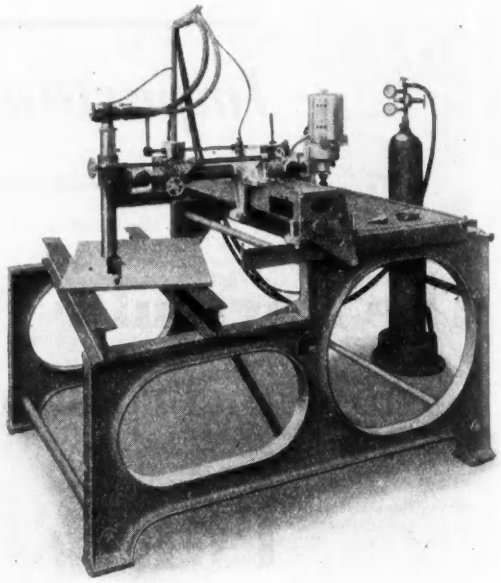
Messrs. Hancock & Co. (Engineers), Ltd., have recently introduced a new series of "Simplex" oxygen cutting machines of improved construction. The principle of operation of these machines is similar to the previous series, the tubular construction of the main carriage has, however, been replaced by a braced plate construction, giving very much greater rigidity and easier and steadier running. By the modification to the main carriage it has been possible to reduce the overall widths of the machines.

The suspension of the moving carriages embodied in the "Simplex" construction prevents wear affecting the accuracy of the running of the carriages and up-and-down or side-play is impossible. The burner and tracer carriage is suspended at three points by two rollers on the top of the front rail, and one underneath the back rail of the main carriage. The tubular cantilever burner arm maintains the bottom roller in contact and at the same time supports the electric tracer which is close up to the back rail. Two pairs of rollers engaging with either side of the top edge of the front rail maintain the burner carriage in longitudinal alignment.

The main carriage is mounted on two coupled wheels, one at each extremity, and these run on two parallel rails, one on either side of the machine. Each wheel has a pinion coaxially mounted which engages with the rack attached to each of the frame rails. The object of the racks and pinions is to maintain the carriage in correct alignment. In addition the main carriage has a wheel at each extremity in contact with the under faces of the two frame rails, and these are kept in contact by the upward pressure of the bottom roller of the burner carriage against the under face of the back rail of the main carriage.

The controls for heating and cutting oxygen, starting and stopping of the electric tracer and the raising and lowering of the burner are all duplicated so that the machines can be operated from either the front or back. The self-contained electric tracer head is driven by a constant speed electric motor, and a variable speed gear with speed indicator renders this adjustment both simple and positive.

The template and drawing table is mounted on trunnions so that it can be easily swung over, one side being for template fixing, and the other for drawings or blue prints. Machines can be operated from a drawing or blue print, from a wooden or soft metal template cut to exact size, or automatically from a channel or strip aluminium template. In addition straight lines and circles can be cut automatically.



"Simplex" Cutting and Profiling Machine.

ACME WRINGERS, LTD.

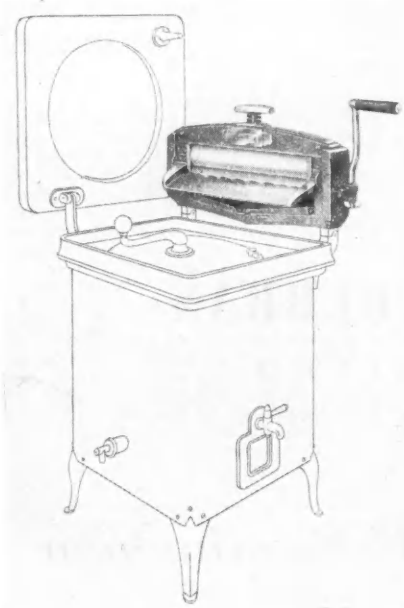
D. 227

The introduction of the new "Acme" wringer has considerably assisted the sales of gas-heated washers, and we understand that Acme Wringers, Ltd., are planning very big developments in this direction.

Concurrently with the opening of the Fair, Acme Wringers launched the most extensive advertising campaign they have ever undertaken. In every announcement special prominence is given to the advantages offered by washing machines fitted with the new "Acme." Buyers of gas equipment, therefore, will find an immediate interest in the "Acme" exhibits.

The Acme stand is a very impressive affair. A notable feature is a series of enlarged photographs illustrating the various stages through which the "Acme" wringer passes in the factory.

The Directors and Sales Representatives of Acme wringers are confident that the new "Acme 55," in conjunction with modern gas-heated washers, opens up a market that is bound to grow rapidly.



"Acme" Wringer in Position.

YORKSHIRE COPPER WORKS, LTD.

B. 632, 723

The Yorkshire Copper Works, Ltd., display non-ferrous tubes in all alloys—viz., copper, brass, aluminium, cupro-nickel, "Yorcalbro" (aluminium brass), phosphor bronze, block tin, &c.

"Yorkshire" fittings, of which they are the sole makers (Patent No. 419521) for water services, heating gas, waste services, and pipe lines of every description, are a special feature of the display. "Yorkshire" light-gauge copper tubes and "Yorkshire" fittings provide definite advantages in connecting up gas appliances, carcassing, and sub-main work. "Yorkshire" tubes and "Yorkshire" fittings constitute a reliable installation; safe in use, neat in appearance and low in cost.

1. "Yorkshire" fittings are gas-tight under all circumstances because: (*a*) They are *pressings* without the porosity of castings; "Yorkshire" fittings are actually subjected to two pressing processes, and the billet is extruded previous to the fitting being pressed. (*b*) They are unaffected by expansion, contraction, or vibration (fatigue), and they cannot become loose in service under any circumstances whatever. 2. The absence of nuts makes "Yorkshire" tubes and fittings particularly acceptable to the housewife, there being no lodging place for dust. 3. Strength of completed job and therefore less liability to damage. 4. Great corrosion resistance. 5. Smooth glasslike bore meaning less friction and, therefore, more uniform pressure. 6. The hardness of copper makes it impervious to knawing by rats and less liable to damage in other ways, and 7, a saving in labour costs.

The neat streamlined appearance of "Yorkshire" fittings, combined with the smaller outside diameter of copper tubes, ensures an improved and decorative appearance for all types of installations.

The small outside diameters of "Yorkshire" tubes means that there is less wall-chasing to be done when the pipe is buried in plaster. The simplicity of bending copper tubes with light portable bending machines also means that considerable saving can be made by eliminating fittings. Owing to the incorporation of the correct amount of solder as an integral part of the fitting, neither special tools nor special training are required to make a neat and perfect joint. Similarly, no special temper of tube is required; soft, semi-hard or hard tubes being equally satisfactory.

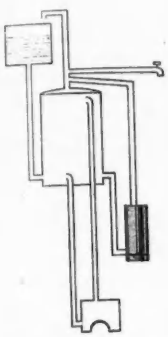
"Yorkshire" fittings are made throughout from the raw metal to the finished product under one roof, by improved and scientific methods of production.

The Hurry Water Heater Co.

ARMOURY CLOSE
LITTLE GREEN LANE, BORDESLEY GREEN
BIRMINGHAM, 9
TELEPHONE:—VICTORIA 0991
TELEGRAMS:—'HURRO' BIRMINGHAM

Exhibiting at B.I.F. Birmingham, Stand No. Ca 307

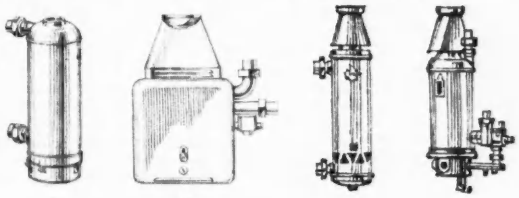
"HURRO" GAS APPLIANCES



All households using solid fuel for water-heating will welcome suggestions for relief from fires—especially in the warmer months and for night use, although all-the-year enjoyment of *automatic* water-heating service is rapidly growing.

Thermostat-controlled **Circulators**—fitted to existing systems without unreasonable outlay by Consumers or Undertakings—are unquestionably the *best* service that Gas can offer.

We offer **Circulators** for every purpose and purse.



1 2 3 4

(1) The *TENBY*, especially for prepayment meters.
(2) *SANDOWN* for severe price-economy.
(3) *AVON* for soft water and low prices.
(4) *MNL* for all waters and all-round utility.

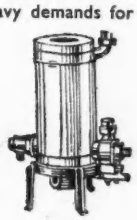
5

For work heavier than domestic use, or for exceptionally heavy demands for Hot Water—the

CAST GUNMETAL and COPPER

(5) *MAGIC* and
(6) *PENNANT*

are excellent under all water-conditions.



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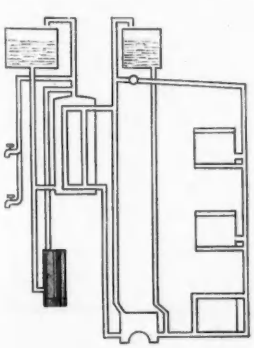
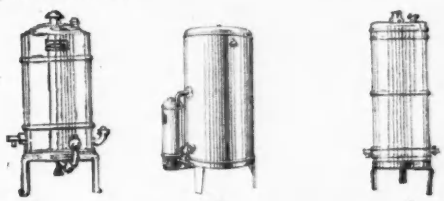


For **Central Heating** the *PENNANT* is outstandingly
...efficient
...adaptable
...economical
...accessible for servicing.

The new Factory Act provides opportunities that few towns have yet fully developed. Nearly every opportunity *should* be advised to instal a **Storage Heater.**

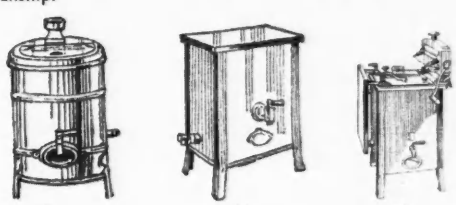
We offer types and capacities eminently suitable for Factories, Flats, Offices, Doctors' and Dentists' Surgeries, and Shops—especially Hairdressers'.



7 8 9

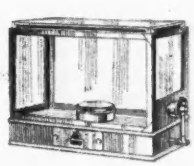
(7) The *OTTAWA* from 12 to 50 gallons
(8) *S.H. SETS* from 50 to 200 gallons
(9) *SEALED E.* in eleven capacities

The Patent Heat Apron . . . raises the Efficiency of *HURRO* **Boilers** above competition—and no Boilers show better specifications or workmanship.



10 11 12

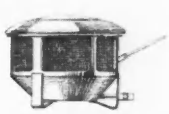
(10) Round and Corner types in several qualities.
(11) Modern designs for modern minds.
(12) Efficiency and excellence in every detail.
A new **Washing Machine** with *ACME* 55 Wringer.



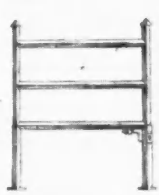
Thermostat-controlled **Aquarium** and **Vivarium.**

Many Showrooms are attractively featuring an Aquarium and the hobby of keeping fish and small animals from the Tropics is growing rapidly.

Several types of **Direct-Heaters**



Anti-frost **Car Engine Heaters**



Thermostat-controlled **Towel Rails**

—and those are not all!

THE INCANDESCENT HEAT COMPANY, LTD.

Cb. 504, 605

Among the exhibits on the stand of the Incandescent Heat Company is a cylindrical Incandescent-Lee Wilson Bell type furnace for bright annealing ferrous and non-ferrous wire and strip in coil form. This furnace is designed for firing by gas on the Lee Wilson vertical radiant tube principle. It is operated in conjunction with three or four bases upon which are placed the charges surrounded by inner covers, of exceptionally low thermal capacity, and which are filled with purging gas, thus protecting the work under treatment from oxidation and discoloration. Special features of this unit are as follows: (*a*) Temperature of load is controlled automatically throughout heating and cooling cycle. (*b*) High production coupled with extreme economy in operating maintenance and fuel costs. (*c*) Maximum flexibility suitable for the most critical heat treatment of all qualities of wire and strip. (*d*) The production of bright annealed wire and strip without complications and the elimination of costly pickling and cleaning processes.

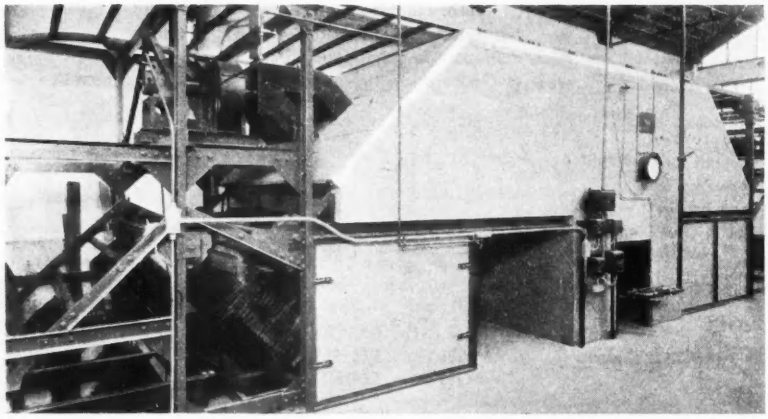
In view of the strides which have been made during the past year in the production of light alloy sheets, sections and component pressings for the aircraft industry, and of the very large amount of business in connexion with heat treatment plant which has been undertaken by the Incandescent Heat Company, this Company has decided to exhibit a small salt bath which is representative of the much larger installations which have been completed during 1938.

This unit has a bath 5 ft. long by 2 ft. wide by 2 ft. 6 in. deep, and is single stage fired, automatically controlled in regard to temperature, and has a mechanically operated cover.

A recuperative gas-fired furnace of standard type is also shown. This furnace has chamber dimensions 24 in. by 18 in. by 12 in., and is of the deep recuperative type. Fired by town gas under natural draught, this furnace is suitable for all heating and heat treatment operations up to 1,200° C., and is designed to suit conditions of both continuous and intermittent use obtaining in workshops generally. Efficient combustion resulting in high thermal efficiency is ensured by the special incandescent multi-combustion chamber system. A live hearth affording maximum heat input to all faces of the work under treatment is a direct result of the controlled combustion which takes place beneath the hearth.

The Company's high-speed steel hardening furnace was introduced about nine months ago, and since that time a considerable number of furnaces of this type has been installed both in this country and abroad. This is a new and improved type of high-speed steel furnace designed to meet the exacting requirements of the modern tool-room in the heat treatment of carbon and high speed steels. It is operated by a single valve control and maintains a highly protective atmosphere for the tools under treatment, eliminating decarburization, blistering, pitting, grain growth, and other difficulties associated with tool hardening.

Two chambers are provided, an upper or preheating chamber maintained at a temperature of 800° C., by the waste heat from the outgoing gases, and a lower hardening chamber maintained at a temperature of 1,350° C. Working temperatures are readily attained in this furnace with extreme economy in fuel consumption. This unit is manufactured under licence from the Gas Light and Coke Company.



A continuous Incandescent Heat Company gas-fired oven for enamelling cooker parts, which are hung on jigs which, in turn, are mounted on the flight bars of a strand chain conveyor. The conveyor carries the work through an enamel dip tank and, after a draining period, the parts are brought into the oven section for stoving.

THE HARLAND ENGINEERING COMPANY, LTD.

Cb. 503

The Harland Engineering Company, Ltd., are exhibiting specimens of their electric motors and centrifugal pumps, also some specialized products.

Among the pumps shown as single units may be mentioned a "Spiroglide" single stage, split casing type, 3 in. delivery in gun metal, sand-blasted only to show the high finish of Harland castings. This pump has its top cover left off to disclose the rotor. Other individual pumps are: "Duoglide" two-stage, split casing type, 3 in. delivery, for 234 gallons per minute 400 ft. head at 2,900 r.p.m.; a 3 in. "Swallowglide" sewage pump, together with a duplicate impeller of the size for this pump; a 2 in. "Monoglide" axial entry type pump; and a 5-stage pump of small size.

Combined units include a 4-stage pump for 800 gallons per minute 460 ft. head at 1,500 r.p.m. coupled to a 150 b.h.p. slipring motor, 420 volts, and mounted on a fabricated steel bedplate. This motor is of particular interest, as it contains features of unusual merit which are now being disclosed. A 5-stage boiler feed pump for 300,000 lb. of water per hour at 590 lb. per sq.in. pressure is exhibited.

A 12¾ in. 4-stage borehole pump is shown lying alongside its headgear and vertical motor of 80 b.h.p. A 5 in. "Monoglide" single-stage pump is direct coupled to an electric motor and mounted on a combination bedplate. A selection of un-machined non-ferrous castings produced in the Harland Foundry at Alloa includes a large impeller. The castings are sand-blasted only. To show the precision of Harland Tool Room Products a punch and die for the stator segments of a very large synchronous motor and a typical jig for small parts are exhibited. Two items of interest are scale models of Harland installation made by Mr. E. H. Evans, Chief Engineer of the Sevenoaks Water Company. One is of a borehole pumping plant at Guildford and the other is of a Harland pumping set at Sevenoaks. A working model of the latter pump is employed on the stand to operate a small ornamental fountain. The attractive stand has been designed by the Company.

This fine stand was designed by the Harland Company's staff.

STAVELEY COAL AND IRON COMPANY, LTD.

B. 416, 517

On the stand of the Staveley Coal and Iron Company, Ltd., are samples of the Company's coal; fractures showing various grades of pig iron; sand-spun pipes, 16 ft. in length, of the socket and spigot or turned and bored types, as well as with flexible joints; and metal-spun 2½ in. to 6 in. diameter pipes. Both these types of pipe are also made to metric standards. Then there are vertically-cast-iron pipes of 9 ft. and 12 ft. lengths. These are available as socket and spigot or turned and bored types or with flexible joints. Another type of pipe shown is flanged. Staveley pipes can be supplied concrete lined and/or bitumen coated.

Specials shown include socket and spigot types, which are equally suitable for use with either sand spun, metal spun, or vertically-cast pipes. Specials are also available for flanged types. Staveley flexible joints exhibited are both of the clamp and bolt types. The firm are the sole licensees for the manufacture "Baxter" patent pre-cast lead joint. Other exhibits include Staveley tarred slag, wood wool for packing purposes, chemicals and by-products, common salt, undried and pure dried vacuum salts, bricks and tiles, and "Stadus" hygienic floor cleaner.

The Baxter patent pre-cast lead joint, for the manufacture of which the Staveley Company are the sole licensees, is again shown. This joint is of great inteerst to all water engineers, gas engineers, and contractors in the country, and all others interested in cast-iron pipes.

The Baxter joint socket is of the usual form with an internal collar or band against which the lead is cast. The lead is cast into position in the form of an internal ring, and is secured against falling out by means of a lead groove of the same dimensions and type as the British Standard.

The casting of this lead ring is carried out at the Works prior to delivery, and a muff, or similar protection, is provided over the socket face to prevent damage in transit. The spigot end of the pipe is tapered, but, nevertheless, the joint is made on the parallel. The tapered portion provides a means of expanding the lead ring, thereby ensuring proper contact between the lead and the socket before caulking begins.

Pipes supplied with the Baxter patent joint are delivered with the requisite quantity of lead already in position in the socket. The fire, melting pot, lead, &c., at the trench side are unnecessary, a further distinct saving being in the avoiding of the wastage of lead in the melting, which, as every experienced contractor knows, amounts to a considerable item in the course of a large contract.

Furthermore, the rate of pipe laying is claimed to be increased. The time taken in melting lead and running joints is cut out. The pipes are laid, placed in position, the spigots pushed home and caulked.

Therefore, the makers state, the Baxter patent joint eliminates a large amount of trouble, danger, and expense in pipe laying; an improved joint is obtained with a minimum amount of caulking. This joint permits a deflection between adjacent pipes of approximately 3°. In the case of 12 ft. pipes, this allows the socket to be moved about 7 in. from the straight. This movement must, of course, be made before the joint is caulked.

Miles of pipes with Baxter patent joints, varying from 3 in. to 15 in. diameter, have already been supplied, and in all cases keen satisfaction has been expressed, both by the engineers and the contractors, with the excellence of the joint and the ease and speed at which the pipes can be laid.

JAMES WALKER & CO., LTD.

D. 422

On their stand Messrs. James Walker & Co., Ltd., are exhibiting an extensive range of packings, jointings, and mechanical rubber goods for all pressures and temperatures of steam, fluids, or gases.

It is the firm's determination to keep pace with progress and by close study of packing and jointing problems each with its own peculiar requirement they are enabled to prescribe suitable types from their standard range or design or manufacture specially if necessary. In addition to packings and jointings of every description for all purposes, Messrs. James Walker state they are specialists in packings and jointings for all types of aircraft engines and components and that they are constant suppliers to H.M. Government Departments.

ANGLO-AMERICAN OIL COMPANY, LTD.

D. 306

The exhibit of the Anglo-American Oil Company, Ltd., is necessarily confined to name display of, and pictorial references to, the Company's many products. There are also two splendid models, one of the Company's £2,000,000 refinery on Southampton Water and the other representing the exploration and production of oil in Great Britain.

CAMBRIDGE TEMPERATURE REGULATORS

THE latest type of Cambridge Indicating Temperature Regulator, illustrated, is in use on the **GAS INDUSTRIES STAND** at Birmingham, automatically controlling the temperature of a gas furnace. Cambridge Regulators are made in various forms, for automatically controlling temperatures up to 1700° C. by operating valves, levers, or other mechanism.

They may be recorders, indicators, or simple controlling instruments, each instrument being so designed and constructed as to ensure maximum reliability and the highest possible accuracy for its particular application.

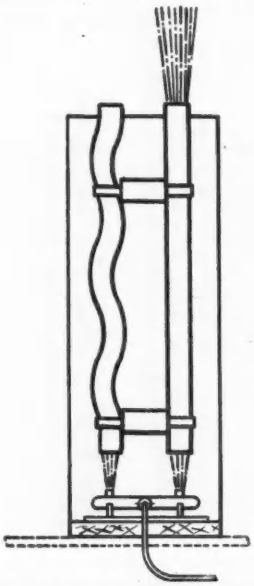
Cambridge Regulators are described in
OUR NEWLY ISSUED FOLDER 67-D
May we send you a copy?

CAMBRIDGE INSTRUMENT COMPANY LTD.
13, GROSVENOR PLACE, LONDON, S.W.1.
WORKS: LONDON & CAMBRIDGE.

COCHRAN & CO. (ANNAN), LTD.

A. 209

As a main exhibit, Messrs. Cochran & Co. (Annan), Ltd., are showing a complete hemispherical furnace as fitted in their "Cochran" vertical multi-tubular boilers. This furnace is claimed to be unique and, at the same time, is one of the most valuable features of the "Cochran" boiler design, as, being pressed from one plate, it is not only the strongest possible structure, but there are no riveted seams exposed to flame.



Demonstrating the "Sinuflo" Principle.

The firm are also showing a practical demonstration of the patent "Sinuflo" tubes, which are fitted to their "Cochran-Kirke" super economic waste-heat and gas-fired boilers. This demonstration consists of two tubes of equal length and bore, one straight and the other "Sinuflo," fired by identical gas jets. This clearly indicates the increased heat transmission achieved by the "Sinuflo" tube. Full particulars are also available on the stand of all the firm's various products.

In addition to the foregoing, next to this stand there is a "Cochran" vertical boiler, 7 ft. in diameter, which is on permanent loan to the exhibition authorities for heating and hot water services during the period of the Fair.

NIAGARA SCREENS (GREAT BRITAIN), LTD.

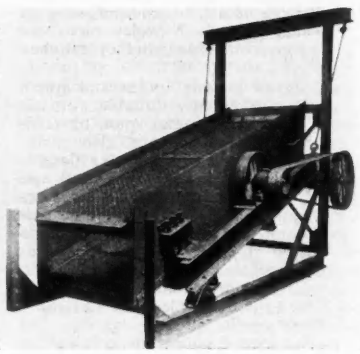
D. 308

On their stand Niagara Screens (Great Britain), Ltd., are showing several examples of their latest industrial screening equipment. This well-known firm of screen manufacturers were pioneers in the scientific development of screening apparatus, and their "Niagara" vibratory screen is a result of many years of investigation and experiment.

It is now generally recognized by the screening industry that the vibratory method of operating screens is most effective and efficient. In the "Niagara" vibratory screen the material is kept continually on the move, both in a vertical and horizontal direction, so that open apertures in the screening cloth are effectively maintained. Choking or blinding of the apertures, which is a prime cause of low grading efficiency, is impossible in the "Niagara," and a grading efficiency of as high as 98% is obtained when handling dry materials. In the "Niagara" screen, positive vibrations are generated by a high-speed eccentric shaft. The term vibration is unfortunate, as it is usually associated with trouble. As a matter of fact, the vibrations set up are confined to the machine itself; there is no extraneous vibration whatever, for, by an ingenious system of counter-weights, a perfectly balanced screen is obtained. Robustly built to withstand the rough usage to which this kind of machine is naturally subjected, the "Niagara" screen is a sound engineering job throughout; the eccentric shaft is made from high-grade steel, accurately turned and ground to size. Bearings are of the roller type, amply proportioned and effectively protected against dust or grit. Special attention is given to both shaft and bearings during manufacture, as reliability and freedom from breakdown depends so much upon these parts. The screen basket and chassis are built up from best quality mild steel plates and sections, braced and welded to ensure a rigid structure.

"Niagara" screens are made in a large range of sizes with either one, two, three, or four decks, and may be driven by motor or from lineshaft through belt or V.-ropes.

Some thousands of "Niagara" screens are operating successfully on all kinds of materials, from 8 in. lumps down to powder, including a large number grading coal, coke,



"Niagara" Vibratory Screen.

ore, and other minerals. To meet the exacting requirements of modern grading specifications, accurate separation and sizing are essential; the "Niagara" screen is claimed to satisfy these demands in every respect. Skilful design, first-class workmanship, and materials are combined in the "Niagara" screen to ensure reliability and trouble-free operation with low production costs.

THE RAWLPLUG COMPANY, LTD.

Cb. 210

The Rawlplug Company are showing a complete range of fixing devices for all purposes. Demonstrations are given of "Rawlplugs," "Rawlbolts," bolt anchors, white bronze plugs, "Rawlplastic," plastic plugs, screw anchors, "Rawldrives," mechanical hammer, tile drills, and boring tools of various descriptions manufactured by the firm.

Exhibits introduced since last year are "Rawlplug" screw anchors and "Rawldrives." The screw anchor is a metal flange plug for exterior and interior fixing to brick, concrete, stone, cement, marble, &c., produced to meet a demand for an anchor made of metal that would resist climatic conditions, and overcome prejudices against non-metallic fixings, without sacrificing the advantages of resiliency associated with fibre "Rawlplugs." The "Rawldrive" is a screw driven home with a hammer; it drives like a nail, turns like a screw, and holds fast in any material—in brief, the screw that needs no screwdriver.

B.I.F. BIRMINGHAM STAND NO. D 523

Thos. Wm. Lench, Ltd.

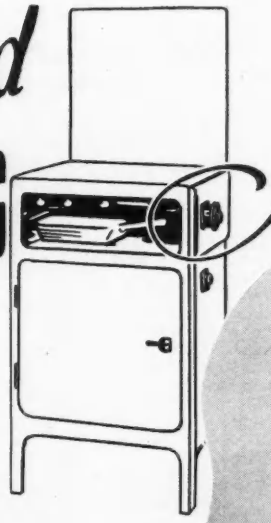
Makers of

MALLEABLE IRON PIPE FITTINGS, Plain, Beaded, and Banded, British Standard Taper Threads, individually tested to 100 lbs. air pressure under water.

Blackheath, Birmingham

Telephone: BLACKHEATH 1151 (5 Lines). *Telegrams: LENCH, BLACKHEATH, STAFFS*

Time Controlled COOKING



★ *See the PRESET Gas Timer demonstrated at the B.I.F. on the stands of the leading cooker manufacturers.*

Cooking becomes almost entirely automatic when it is time-controlled by the PRESET Gas Timer. The modern housewife has merely to set the PRESET for the cooking time required and leave the meal to cook itself. Time thus gained may be turned to advantage. The housewife returns from shopping or visiting or the pictures to find the meal done to a turn. And if she is a bit late, it does not matter—the gas is turned off, over-cooking is impossible.

PRÉSET *Gas Timer*

SMITH'S ENGLISH CLOCKS LIMITED · CRICKLEWOOD · LONDON · N·W·2

PARKINSON

We are exhibiting at the B.I.F. BIRMINGHAM and cordially invite you to visit our Stands Ca 603 and 502

CONSULT the PARKINSON GAS LIGHTING RESEARCH BUREAU . . .

ON YOUR STREET LIGHTING PROBLEMS

Public Lighting is the Shop Window of the Gas Industry, a constant reminder to the man in the street of the advantages of Gas for Heat, Light, and Power.

Every effort, therefore, should be made to retain the gas street-lighting load. The most certain method of achieving this is to employ scientific methods in assessing lighting and providing adequate illumination.

W. PARKINSON & Co.

(INCORPORATED IN PARKINSON & COWAN (GAS METERS) LTD.)

COTTAGE LANE WORKS, CITY ROAD, LONDON, E.C.1.

Iron Lane, Stechford, Birmingham, 9.

Raphael Street Works, Cromac Street, Belfast.

BRITISH OXYGEN COMPANY, LTD.

D. 312, 411

In the B.O.C. exhibit once more attention has been concentrated on the newer techniques of oxy-acetylene welding and cutting, supported by a comprehensive display of equipment.

The versatility of the oxygen flame cutting process enables steel plate 14 in. thick to be cut with the same ease as 1/32 in. sheet. Heavy sections are carved into shapes, typical of the latest practice in roughing out and finishing large forgings by a B.O.C. 55 in. universal machine, which cuts through steel 14 in. thick at the rate of a foot in less than five minutes. The B.O.C. 36 in. and the portable straight line and circle cutting machines can be seen at work on the preparation of steel plates for welding and stack cutting, in which a number of thin steel plates are clamped together and cut simultaneously.

The new ultra-speedy hand cutter, designed to cut sheet metal down to 1/32 in. thick cleanly and without distortion is being demonstrated on request.

New and improved techniques of oxy-acetylene welding such as rightward welding and lindewelding are constantly being developed, and a number of these are demonstrated at regular intervals, the operators being assisted by lantern slides.

A phenomenal saving in gases and increase in speed obtained by using two-operator vertical welding is well-known in the case of steel, and it is interesting to see that the technique has now been applied to cast iron, using a special bronze welding rod.

The high quality of workmanship seen on this stand depends both on the skill of the operators and the excellence of their equipment and materials. A complete display of B.O.C. welding and cutting equipment is on view, together with a comprehensive range of welding rods and fluxes evolved by the Company's Technical and Research Departments, including new special bronze rods for the low-temperature welding of copper and cast iron. The new "Alda" two-stage pressure regulators for oxygen and acetylene permit accurate control of pressures, especially in the lower ranges.

LONDON ALUMINIUM CO., LTD.

A. 310, 411

The stand of the London Aluminium Company, Ltd., built on unusual lines, not only accommodates a wide range of "Diamond" aluminium ware, but also embraces a cinematograph projecting a brief film entitled "'Diamonds' in the Making," and with this is coupled a practical demonstration of aluminium spinning.

The film is based on the production of a "Diamond" kettle commencing with the raw material and follows through the stages of pressing, spinning, piercing, mounting, polishing, &c., giving the audience a brief but vivid impression of the home of "Diamond" products. The London Aluminium Company, Ltd., have a reputation for spinning work of wide variety, and while the demonstration is confined to small ware, examples of spun engineering products on the stand are of exceptional proportions. Among other things, aluminium spheres of 3 ft. diameter are featured.

New lines are prominent in the form of several entirely new shapes of teapots, coffee pots, percolators, and a range of patented jugs with special features.

Hotplate utensils are among the established popular lines and chrome-plated table ware introduces some new attractive hand-engraved designs.

POLES (1938), LTD.

Cb. 508, 609

25 ft. to Light-Source, 8 ft. Bracket Arm.

Poles (1938), Ltd., are displaying a wide range of "Adastra" lighting standards. These "Adastra" poles are of the galvanized sectional steel type, and being of tapered design the assembled pole presents a pleasing appearance. Although very strong, the light weight of these poles makes for economical transport costs. One complete light type 30 ft. pole, nested for transport, can be carried by one man. Erection costs are also considerably reduced.

A particularly interesting exhibit is the "Adastra" lighting standard with optimum type arm, equipped with raising and lowering gear, neatly housed inside the pole. Also shown is a standard with tapering pressed steel sleeve fitted bracket arm. In this standard an inspection door is provided so that clock control gear, &c., could be built into the pole in an easily accessible position. The above mentioned standards are of the type now being used for Class A lighting of main roads—*i.e.*, 25 ft. to light source.

There is also a short type standard as used for secondary road lighting complete with a spigot adaptor and double ladder arms for receiving vertical mounting lanterns, or swan neck type tubular brackets. Another interesting exhibit is the "Adastra" climbing shoe. Using this shoe any type of pole or standard can be scaled with speed and safety, without damaging the paint work.

JOHN THOMPSON (WOLVERHAMPTON), LTD.

D. 410, 513

John Thompson (Wolverhampton), Ltd., a subsidiary Company of John Thompson Engineering Company, Ltd., are on the latter's stand, which embrace a comprehensive range of exhibits which includes the "Super-Economic" boiler of fusion-welded construction throughout; the "Triumph" forced draught stoker; the "Vulcan" automatic stoker; fusion welding; John Thompson "La Mont" boiler; boiler house equipment, from foundation to turbine stop valve; and "John Thompson" submerged ash conveyor.

BALDWINS, LTD. (Midland Branch)

Cb. 222

An item of special interest on the stand of Messrs. Baldwins, Ltd. (Midland Branch) is their heavily coated Staffordshire best charcoal tinned sheets and tinplates, which are used by many leading undertakings in the country in the manufacture of gas meters. This firm have catered for this trade for well over half a century, both at home and abroad, and their Staffordshire plates, by reason of their extra heavy coating of tin and their special methods of manufacture, are universally recognized as a most reliable material for gas meter work.

JOHN G. STEIN & CO., LTD.

D. 303

The possibility of production of gas without difficulties caused by shut-downs for repairs centres very largely about the selection of suitable refractory materials for the various parts of the plant involved. In the comprehensive display of refractory products arranged on the stand of Messrs. John G. Stein & Co., Ltd., there is to be found much of interest to the Gas Industry. The general standard of finish, and accuracy of shape, &c., is very high, and is indicative of the care which is obviously expended in manufacture.

A group of retort sections for both horizontal and vertical installations of all types made in Bluebell 95% SiO_2 claims attention. This brand is tough and is well able to resist the abrasive action of moving charges. Their excellent shape ensures the necessary good fitting. In gas producers and water-gas generators the refractories employed must be capable of withstanding the corrosive and abrasive action of ash and slags, and there is shown an adequate range of firebrick from which to choose, for from "Nettle" 42-44% Al_2O_3, "Thistle" 35-37% Al_2O_3, and "Stein" 30-32% Al_2O_3, a brand can be selected which will withstand not only these conditions, but also the reducing atmosphere and temperature fluctuation characteristics of water-gas generators.

The question of bonding also is of importance, and in this connexion there is exhibited a useful range of refractory cements and patching materials, from which "Maksiccar" fire cement and "Maksiccar II." refractory cement, respectively, siliceous and aluminous, may be singled out for mention. The former has found useful application for patching the cooler sections of retorts. Engineers find particular interest also in the provision of new high-temperature insulating bricks. The outstanding features of these are low thermal capacity, low thermal conductivity, and high refractoriness, which, of course, enable them to be used in positions with high face temperatures.

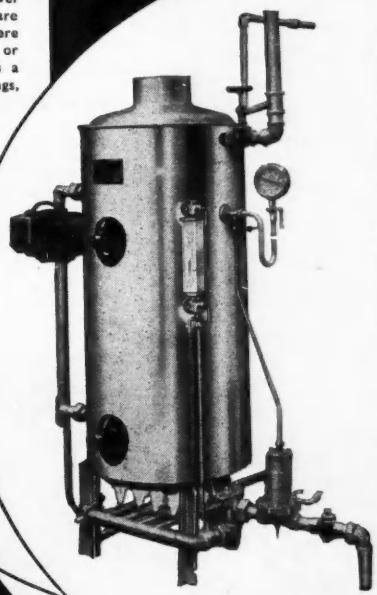
The exhibit is further, however, of quite general interest, for in addition to the sections already described there are many instructive features, not the least of which is an attempt to show the recommended applications of the various products exhibited by means of sectional furnace models in colour.

CONTROLLED
Steam
for
A·R·P

STEAM PRESSES, STEAM IRONS, PAN BOILING, MOULDING PRESSES, AIR HEATING, EVAPORATORS, STEAM COILS, COOKING, STERILISING, DAIRIES, ETC., ETC.

BROCKHOUSE
V·S & V·H BOILERS
are particularly suited to the requirements of
DE-CONTAMINATION CENTRES

Designed to give Highest Thermal Efficiency and Lowest Operating Costs, Brockhouse Gas-fired Steam Boilers are a good investment wherever steam is needed. They are remarkably compact and there is positively no sooting or backfiring. Each boiler is a complete unit with all fittings, and is very easy to install, the only connections to be made being those to existing gas and water supplies. Write to the makers for full details.



B.I.F.
STAND
D.709/606

BROCKHOUSE
GAS-FIRED
Steam Boilers

BROCKHOUSE HEATER CO. LTD.
VICTORIA WORKS, WEST BROMWICH, STAFFS.
London - - - Australia House, Strand, W.C. 2.

Holdens

DONALD MACPHERSON & CO., LTD.—B. 527

This year's display on the stand of Messrs. Donald Macpherson & Co., Ltd., is somewhat on the lines of last year, but the firm are making a strong point of a one-coat glossy synthetic material, which can be applied by the "wet-on-wet" process, as well as by dipping, spraying, or brushing. This material will both air-dry and withstand heat treatment.

Displayed also are specimens of "Foochow" liquid wall glaze, the economical hygienic tile-like finish for brick plaster, or concrete walls, &c., of engine and meter houses, laboratories, and wash-houses. Impervious to oil, grease, steam, and fumes, it will withstand repeated washing down without impairing its durability. A section of brick wall on this stand shows this admirably.

"Foochow" pipe line enamels are being used in some of the best known works in the country to facilitate the identification of pipes, conduits, ducts, and cables. The enamels are in British Standards Specification colours (cream for gas, crimson for steam, &c.), and are specially formulated for use among the strong fumes and hard wear associated with gas-works and coke oven plants.

"Foochow" oriental lacquer and "Synroz" synthetic enamels (both air-drying and stoving types) possess great speed of application, high heat resistance, durability, and modern colour effects.

Lamp column enamels are also shown. These give a bright hard glossy coating to which dust and dirt do not readily cling and whereon rainstorms constantly renew their freshness.

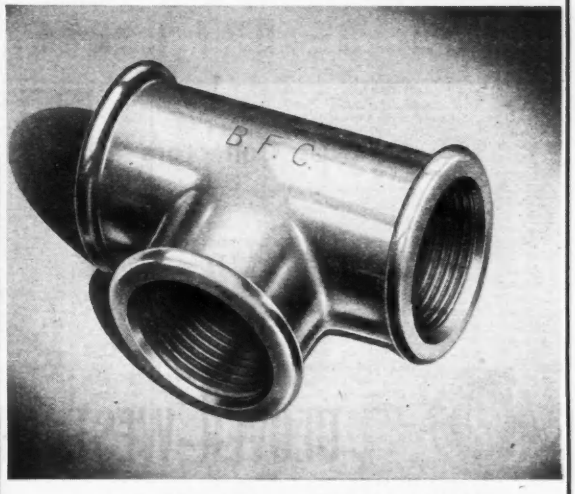
TRAINS TO & FROM THE FAIR (12 Minutes' Journey)

From Birmingham (New Street)						From Castle Bromwich					
a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.
8.30	9.01	9.12	9.45	10.22	10.43	10.08	10.31	10.39	11.01	11e12	11.46
a.m.	a.m.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
11.00	11.13	11.28	12s22	12*25	12s50	12*19	12.26	12.55	1.37	1.42	1.52
p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	2*16	2.30	2.46	3.07	3.19	3s50
1.06	1*12	1s14	1*20	1.45	1*52	4*15	4.25	4*40	4.51	5.00	5.30
2.00	2*10	2.37	3.04	3.20	3.35	5†*39	5.44	5†*55	6a05	6.10	6.15
4.06	4e30	4.55	5E01	5f05	5.15	6.20	6s25	6†*30	6.48	7*07	7.10
5.35	5.50	6.05	6.35	7.05	7.18	7.28	8.08	8.34	9.07	9.21	10.27
7.25	8.50	...	...	...	...						

*—Feb. 25 only. †—Through service to Birmingham, Selly Oak, Bournville, and Kings Norton. a—Through express train to Euston, except Feb. 25. E—Feb. 27 and 28 only. e—Feb. 20 and March 3 only. f—Except Feb. 27 and 28. s—Except Feb. 25.

LONDON-CASTLE BROMWICH EXPRESS.
A special London-Castle Bromwich express will run daily, except Feb. 25, leaving Euston 8.55 a.m., arriving at Castle Bromwich 11.17 a.m. The return express train leaves Castle Bromwich 6.05 p.m., arriving Euston 8.35 p.m., except Feb. 25.

Best of Fittings

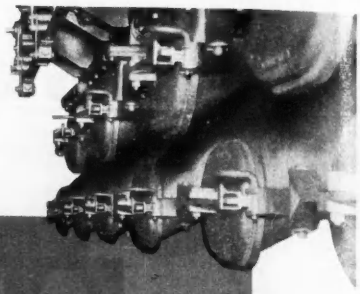


B.I.F. Birmingham, STAND B 223

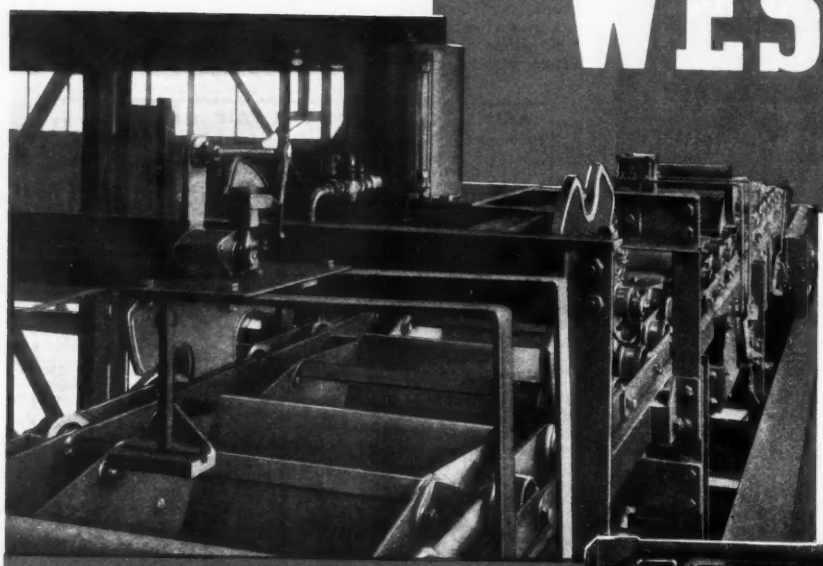
BRITISH FITTINGS CO. (HENDON) LTD.
ADRIAN AVENUE, NORTH CIRCULAR ROAD, N.W.2
London Stock Telephone: GLA 6363
Works: Oakengates & Old Hill - Manchester Stock

434
CARBONIZING PLANTS BUILT OR ON ORDER IN 24 COUNTRIES

FOR CASMAKING EFFICIENCY



WEST'S



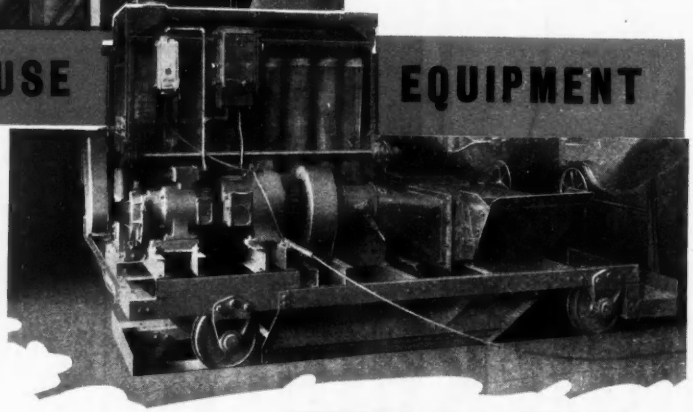
RETORT HOUSE EQUIPMENT

Automatic Lubricators

are a standard feature of the West lip-bucket conveyor. Coal and coke are handled—often simultaneously—with a minimum of wear on the component parts. The illustration shows a West lip-bucket conveyor with automatic lubrication at the New Wortley works of the Leeds Corporation Gas Department.

Dust Collectors

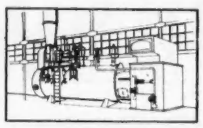
in the form of travelling units below the retort bench are a successful means of coke de-dusting at the point of discharge. This unit operates with Glover-West vertical retorts installed for the Belfast Corporation Gas Department.



installed with

GLOVER-WEST VERTICALS

GLOVER-WEST VERTICAL RETORTS • WESTVERTICAL CARBONIZING CHAMBERS



WASTE HEAT RECOVERY AND PRESSURE PRODUCER EQUIPMENT

WEST'S GAS IMPROVEMENT COMPANY, LTD.

MANCHESTER: ALBION IRONWORKS, MILES PLATTING — 'Phone: COLLYHURST 2961 : 'Grams: "STOKER, MANCHESTER"

LONDON: COLUMBIA HOUSE, ALDWYCH, W.C. 2 — 'Phone: HOLBORN 4108 : 'Grams: "WESGASCO, ESTRAND, LONDON"

GAS STOCKS AND SHARES

A more confident tone was in evidence on the Stock Exchange last week, and as a consequence markets were a trifle more active, although business began to tail off towards the close. Compared with more normal times, however, the volume of business remains small. The values of gilt-edged stocks were well maintained, while dividend announcements gave a fillip to home rails, some of which made further substantial recovery. There was a good demand for industrial shares, and with few exceptions prices moved upwards. Oil shares also had a good following, especially Mexican Eagles, but mines became irregular on profit-taking.

There was not a large demand for gas stocks and shares, and apart from a number of *ex div.* markings prices generally closed unchanged on the week. The only reduction of note was that of Preston "A" stock which was marked down 21 points to 182 on the Liverpool Exchange, although in the Supplementary List the nominal quotation is 190, business being recorded at 192 a fortnight ago.

The following final ordinary dividends for 1938 have recently been announced, all of which are at the same rates as a year ago, the figures in brackets being the dividends for the full year: Bristol 2½% (5%); Cambridge 10%, 7%, and 5% maximum stocks, dividends at the full rates; Cardiff 3% (6%); Croydon sliding scale 3½% (7%); Derby 4½% (7½%); East Hull 2½% (5%); Newcastle £2 17s. 6d.% (£5 7s. 6d.%); Northampton 2½% (5%); Oxford 5% (10%); Romford 4% (8%); Rugby 2¾% (5½%); Sunderland 3% (6%); Tottenham £3 7s. 6d.% (6¾%); Wakefield 4% (6½%); Weston-super-Mare 2½% (5%); Woking "A" 5½% (11%), "B" £3 17s. (£7 14s.).

Official Quotations on the London Stock Exchange

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations Feb. 10.	Rise or Fall on Week.
1,767,439	Sept. 5	8	8	Alliance & Dublin Ord. ...	130—140	...
374,000	Dec. 19	4	4	Do. 4 p.c. Deb. ...	93—98	...
734,733	Nov. 7	5	5	Asscd. Gas & Water U'd'ts Ord.	17/—19/—	...
500,000	,,	4½	4½	Do. 4½ p.c. Red. Cum. Pref.	19/—21/—	...
444,389	,,	4	4	Do. 4 p.c. Red. Cum. Pref.	19/—21/—	...
296,523	,,	4	4	Do. 4 p.c. Irred. Cum. Pref.	16/—18/—	...
500,000	Sept. 5	3½	3½	Do. 3¾ p.c. Red. Deb. ...	93—98	...
560,070	Aug. 22	7	7	Barnet Ord. 7 p.c.	158—162	...
300,000	Oct. 10	1/9⅔	1/4⅔	Bombay, Ltd.	22/6—24/6	...
180,435	Aug. 22	9½	9½	Bournemouth sliding scale ...	195—205	...
640,407	,,	7	7	Do. 7 p.c. max. ...	157—162	...
495,960	,,	6	6	Do. 6 p.c. Pref. ...	130—135	...
50,000	Dec. 19	3	3	Do. 3 p.c. Deb. ...	75—80	...
312,025	,,	4	4	Do. 4 p.c. Deb. ...	96—101	...
335,000	,,	5	5	Do. 5 p.c. Deb. ...	113—118	...
357,900	Aug. 8	7½	7½	Brighton, &c., 6 p.c. Con. ...	143—148	...
659,955	,,	6½	6½	Do. 5 p.c. Con. ...	126—131	...
205,500	,,	6	6	Do. 6 p.c. 'B' Pref.	127—132	...
855,000	Sept. 19	8	7	British Ord.	133—137	...
100,000	Dec. 19	7	7	Do. 7 p.c. Pref.	138—143	...
350,000	,,	5½	5½	Do. 5½ p.c. 'B' Cum. Pref.	112—117	...
120,000	,,	4	4	Do. 4 p.c. Red. Deb. ...	95—100	...
450,000	,,	5	5	Do. 5 p.c. Red. Deb. ...	100—105	...
450,000	,,	3½	3½	Do. 3½ p.c. Red. Deb. ...	90—95	...
100,000	22 May '33	6	4	Cape Town, Ltd.	1—2	...
100,000	6 Nov. '33	4½	4½	Do. 4½ p.c. Pref. ...	1—2	...
150,000	Dec. 19	4½	4½	Do. 4½ p.c. Deb. ...	60—70	...
626,860	Feb. 6	6	6	Cardiff Con. Ord.	116—121*	−2
237,860	Dec. 19	5	5	Do. 5 p.c. Red. Deb. ...	103—108	...
98,936	Sept. 19	2/—	2/—	Colombo Ord.	1⅛—1¼	...
24,510	,,	1/4⅓	1/4⅓	Do. 7 p.c. Pref. ...	22/6—24/6	...
739,453	Oct. 10	−/11·48	−/11·48	Colonial Gas Assn. Ltd. Ord.	16/6—18/6	...
296,144	,,	1/3·30	1/3·30	Do. 8 p.c. Pref. ...	23/6—25/6	...
1,775,005	Jan. 23	5	4	Commercial Ord.	72—77	−1
140,000	Feb. 6	§13/4	4	Do. 4 p.c. Red. Pref. ...	95—100*	...
620,000	Dec. 5	3	3	Do. 3 p.c. Deb. ...	70—75	...
286,344	Aug. 22	5	5	Do. 5 p.c. Deb. ...	113—118	...
200,000	,,	§3⅔	4	Do. 3¾ p.c. Red. Deb. ...	97—102	...
807,560	Aug. 8	7	7	Croydon sliding scale ...	135—140	...
644,590	,,	5	5	Do. max. div.	100—105	...
620,385	Dec. 19	5	5	Do. 5 p.c. Deb. ...	112—117	...
239,000	Feb. 6	5	5	East Hull Ord. 5 p.c.	93—98*	−2
186,155	Feb. 6	6	6	East Surrey Ord. 5 p.c. ...	113—118*	−3
176,211	Dec. 5	5	5	Do. 5 p.c. Deb ...	112—117	...
250,000	Nov. 7	8	4	Gas Consolidation Ord. 'B' ...	19/—21/—	...
250,000	,,	4	4	Do. 4 p.c. Red. Cum. Pref.	17/6—19/6	...
19,189,963	Feb. 6	5⅔	5⅔	Gas Light & Coke Ord. ...	21/6—22/6*	−−/3
2,600,000	,,	3½	3½	Do. 3½ p.c. max. ...	72—77*	−1
4,477,106	,,	4	4	Do. 4 p.c. Con. Pref. ...	92—97*	−2
2,993,000	Jan. 9	3¾	3¾	Do. 3¾ p.c. Red. Pref. ...	93—98	...
8,602,497	Nov. 21	3	3	Do. 3 p.c. Con. Deb. ...	72—77	...
3,642,770	,,	5	5	Do. 5 p.c. Red. Deb. ...	109—113	...
3,500,000	,,	4½	4½	Do. 4½ p.c. Red. Deb. ...	107—111	...
700,000	Sept. 5	3½	3½	Do. 3½ p.c. Red. Deb. ...	90—95	...
270,466	Aug. 22	6	6	Harrogate New Cons. ...	117—122	...
157,500	Mar. 21	1/22⅔	‡1/—	Hong Kong and China Ord. ...	⅝—¾	...
213,200	Feb. 6	5⅔	6	Hornsey Con. 3½ p.c. ...	97—102*	...
5,600,000	Oct. 24	12	8	Imperial Continental Cap. ...	116—121	−1
172,810	Jan. 23	3½	3½	Do. 3½ p.c. Red. Deb. ...	96—101	...
235,242	Aug. 8	8½	8½	Lea Bridge 5 p.c. Ord. ...	160—165	...
63,480	Dec. 19	3	3	Maidstone 3 p.c. Deb. ...	69—74	...
45,000	Nov. 21	†10	†10	Malta & Mediterranean ...	130—135	...
392,000	Oct. 3	5½	5½	Metropolitan (of Melbourne) 5½ p.c. Red. Deb. ...	100—105	...
231,977	Aug. 22	5	5	M.S. Utility 'C' Cons. ...	99—104	...
968,658	,,	4	4	Do. 4 p.c. Cons. Pref. ...	93—98	...

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations Feb. 10.	Rise or Fall on Week.
390,076	Dec. 19	4	4	M.S. Utility 4 p.c. Deb. ...	95—100	...
148,955	,,	5	5	Do. 5 p.c. Deb. ...	112—117	...
125,000	Jan. 3	3½	3½	Do. 3½ p.c. Red. Bds.	94—97	...
675,000	Nov. 21	†6	†6	Montevideo, Ltd.	70—75	...
250,000	Aug. 8	7½	7½	North Middlesex 6 p.c. Con.	142—147	...
396,160	Feb. 6	5	5	Northampton 5 p.c. max. ...	104—109*	−1
300,000	Oct. 24	†7	†9	Oriental, Ltd.	145—150	...
468,537	Dec. 5	8	7½	Plymouth & Stonehouse 5 p.c.	130—140	...
621,667	Aug. 8	8½	8½	Portsmouth & Gosport Cons.	157—162	...
241,446	,,	5	5	Do. 5 p.c. max. ...	100—105	...
73,350	,,	5	5	Do. 5 p.c. Pref. ...	107—112	...
75,000	,,	4	4	Do. 4 p.c. Pref. ...	90—95	...
114,000	Feb. 6	5	5	Preston 5 p.c. Pref.	105—110*	...
247,966	Dec. 19	4	4	Primitiva 4 p.c. Cons. Deb. ...	96—101	...
625,959	Jan. 9	4	4	Do. 4 p.c. Red. Deb. ...	94—99	...
15,000	Sept. 5	6	6	San Paulo 6 p.c. Cum. Pref. ...	8½—9	...
441,275	Sept. 19	1/1⅛	1/1⅛	Severn Val. Gas Cor. Ld. Ord.	20/6—22/6	...
460,810	Sept. 19	−/10⅛	−/10⅛	,, ,, 4½ p.c. Cum. Pref.	19/6—21/6	...
133,201	Aug. 22	5	8⅛	Shrewsbury 5 p.c. Ord. ...	143—148	...
9,000	June 3	4	‡4	South African Ord.	4½—5⅛	...
1,371,752	Aug. 22	1/2⅝	1/2⅝	South East'n Gas Cn. Ld. Ord.	21/6—23/6	+−/6
871,636	,,	−/10⅛	−/10⅛	Do. 4½ p.c. Red. Cum. Pref.	19/—21/—	...
498,818	,,	4	4	Do. 4 p.c. Cum. Pref. ...	17/—19/—	...
450,000	Feb. 6	4	4	Do. 4 p.c. Deb.	96—101*	−2
150,000	,,	3⅛	3⅛	Do. 3⅛ p.c. Red. Deb. ...	93—98*	−1
6,709,895	Feb. 6	5	6	South Met. Ord.	100½—103½*	−2
1,135,812	,,	6	6	Do. 6 p.c. Irred. Pref. ...	126—131*	−2
850,000	,,	4	4	Do. 4 p.c. Irred. Pref. ...	92—97*	−1
1,895,445	Dec. 19	3	3	Do. 3 p.c. Deb.	73—78	...
1,000,000	Jan. 9	5	5	Do. 5 p.c. Red. Deb. ...	107—110	−1
600,000	,,	§31/—	3⅛	Do. 3⅛ p.c. Red. Deb. ...	98—101	...
1,543,795	Jan. 23	6	6	South Suburban Ord. 5 p.c. ...	111—116	...
512,825	,,	5	5	Do. 5 p.c. Pref.	108—111	...
500,000	,,	4	4	Do. 4 p.c. Pref.	93—98	...
250,000	,,	3¾	3¾	Do. 3¾ p.c. Red. Pref. ...	91—96	...
888,587	Dec. 5	5	5	Do. 5 p.c. Deb.	113—118	...
250,000	,,	4	4	Do. 4 p.c. Deb.	95—100	...
200,000	Feb. 6	3½	3½	Do. 3½ p.c. Red. Deb. ...	90—95*	...
427,859	Sept. 19	8⅔	9⅔	S. Western Gas & Water Ord.	16/—18/—	...
160,523	Oct. 10	−/10⅓	−/10⅓	Do. 4½ p.c. Red. Cum. Pf.	19/—21/—	...
110,000	Dec. 19	4	4	Do. 4 p.c. Red. Deb. ...	93—98	...
750,541	Feb. 6	5	5⅓	Southampton Ord. 5 p.c. ...	104—109*	...
148,836	Dec. 19	4	4	Do. 4 p.c. Deb.	93—98	...
350,000	Aug. 8	5⅓	5⅓	Swansea 5⅓ p.c. Red. Pref. ...	105—110	...
200,000	Dec. 19	3⅓	3⅓	Do. 3⅓ p.c. Red. Deb. ...	92—97	...
1,076,490	Aug. 8	6½	6½	Tottenham and District Ord.	127—132	...
409,835	,,	5⅓	5⅓	Do. 5⅓ p.c. Pref.	116—121	...
62,235	,,	5	5	Do. 5 p.c. Pref.	108—113	...
334,615	Dec. 5	4	4	Do. 4 p.c. Deb.	95—100	...
85,701	Jan. 9	6	6	Tuscan 6 p.c. Red. Deb. ...	95—100	...
1,131,550	Aug. 22	6	4	U. Kingdom Gas Cor. Ord. ...	18/—19/—	...
1,051,280	Nov. 7	4½	4½	Do. 4½ p.c. 1st Cum. Pref.	19/—21/—	...
762,241	,,	4	4	Do. 4 p.c. 1st Red. Cum. Pf.	19/—21/—	...
745,263	Dec. 19	4½	4½	Do. 4½ p.c. 2nd Non-Cum. Pf.	15/6—17/6	...
1,066,186	Sept. 5	3⅓	3⅓	Do. 3⅓ p.c. Red. Deb. ...	96—99	...
375,689	Aug. 8	7	7	Uxbridge, &c., 5 p.c.	125—130	...
133,010	,,	5	5	Do. 5 p.c. Pref. ...	108—113	...
1,371,138	Jan. 23	7	7	Wandsworth Consolidated ...	132—137	...
2,525,768	,,	4	4	Do. 4 p.c. Pref.	93—98	...
1,343,964	Dec. 19	5	5	Do. 5 p.c. Deb. ...	113—118	...
383,745	,,	4	4	Do. 4 p.c. Deb. ...	95—100	...
400,000	,,	§25/—	3⅜	Do. 3⅜ p.c. Red. Deb. ...	96—101	...
558,342	Feb. 6	6⅔	6⅔	Watford and St. Albans Ord.	128—133*	−2
200,000	,,	5	5	Do. 5 p.c. Pref. ...	106—111*	−1
200,000	,,	5⅓	5⅓	Do. 5⅓ p.c. Pref. ...	112—117*	−1
200,000	,,	§16/8	4	Do. 4 p.c. Red. Pref. ...	95—100*	...
200,000	Dec. 19	4	4	Do. 4 p.c. Red. Deb. ...	95—100	...
200,000	,,	3⅓	3⅓	Do. 3⅓ p.c. Red. Deb. ...	92—97	...

a.—The quotation is per £1 of stock. * Ex. div. † Paid free of income-tax. ‡ For year. § Actual.

Supplementary List and Provincial Exchanges overleaf.

STOCK AND SHARE LIST—Cont.

Supplementary List, not Officially Quoted, London

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Nominal Quotations Feb. 10.	Rise or Fall on Week.
202,152	Sept. 5	5	5	Ascot Ord.	101—106	...
128,182	Dec. 19	5	5	Do. 5 p.c. Pref.	107—112	...
31,035	Aug. 22	–/4½	–/4½	Associated Utilities 4 p.c. Pref.	16/—18/–	...
100,000	Dec. 19	3½	3½	Do. 3½ p.c. Red. Deb. ...	95—100	...
17,000	Aug. 22	8	8	Bognor Orig. Ord. 'A' ...	155—165	...
62,210	,,	8	8	Do. New Addl. 'A' ...	155—165	...
87,160	,,	7	7	Do. New 7 p.c. max. ...	145—155	...
37,440	Feb. 6	10	10	Cam. Univ. & Town 10 p.c. max.	183—193*	—5
125,970	,,	7	7	Do. 7 p.c. max.	131—136*	—2
39,025	,,	5	5	Do. 5 p.c. max.	95—100*	—2
96,410	Feb. 6	4½	4½	Cardiff 4½ p.c. Pref. ...	93—98*	—2
150,000	Aug. 8	4	4	Croydon 4 p.c. Pref.	93—98	...
130,000	Dec. 19	4	4	Do. 4 p.c. Deb.	95—100	...
65,000	Aug. 8	8½	7½	Eastbourne 'A' 5 p.c. ...	140—145	...
198,000	,,	7	6	Do. 'B' 3½ p.c.	114—119	...
112,312	,,	5	5	Do. 5 p.c. Pref.	107—112	...
130,000	Dec. 19	5	5	Do. 5 p.c. Deb.	110—115	...
24,000	Aug. 8	8½	8½	Great Yarmouth 8½ p.c. max.	43—48	...
59,400	,,	7½	7½	Do. 7½ p.c. max.	33—38	...
51,160	Dec. 5	5½	5½	Do. 5½ p.c. Deb.	117—122	—3
152,600	Sept. 5	9	8	Guildford Cons.	163—168	...
54,055	,,	5	5	Do. 5 p.c. Pref.	107—112	...
68,250	Dec. 19	5	5	Do. 5 p.c. Deb.	110—115	...
156,600	Aug. 22	7½	7½	Hampton Court Cons. ...	126—131	...
80,000	Aug. 8	4	4	Lea Bridge 4 p.c. Pref. ...	90—95	...
60,000	,,	6	6	Do. 6 p.c. Pref.	121—126	...
94,876	Dec. 5	4	4	Do. 4 p.c. Deb.	94—99	...
73,620	Sept. 5	8½	8½	Luton Cons. 'A'	153—163	...
107,960	Sept. 19	5½	4	Mid Kent Ord.	8¾—9¼	...
230,940	Feb. 6	10	10	Oxford & District Ord. ...	192—197*	—3
47,112	,,	5	5	Do. 5 p.c. Pref.	104—109*	—2
50,000	,,	6	6	Do. 6 p.c. Red. Pref. ...	108—113*	+1
126,193	Nov. 7	7½	7½	Peterborough Ord.	137—142	...
64,990	Sept. 5	6½	7½	Redditch Ord....	118—128	...
166,850	Feb. 6	8	8	Romford Ord.	142—147*	...
60,000	,,	4	4	Do. 4 p.c. Pref.	97—102*	—1½
44,000	Sept. 19	5	5	Do. 5 p.c. Deb.	112—117	...
25,570	Feb. 6	5½	5½	Rugby 5½ p.c. Pref.	118—123*	—2
25,000	,,	6	6	Do. 6 p.c. Red. Pref. ...	103—108*	—1
42,750	Dec. 5	5½	5½	Do. 5½ p.c. Deb.	117—122	...
110,950	Aug. 22	8	8	Ryde Ord.	140—150	...
270,086	Sept. 5	7	7	Slough Ord.	128—133	...
21,000	Dec. 19	5	5	Do. 5 p.c. Deb.	108—113	...
28,872	Nov. 7	5½	5½	S. Midland Gas Cpn. Ltd. Ord.	17/—19/–	...
28,866	Sept. 5	4½	4½	Do. 4½ p.c. Red. Cum. Pref.	17/—19/–	...
117,228	Aug. 8	7	5	Swindon Cons.	102—107	...
60,425	Dec. 5	5	5	Do. 5 p.c. Deb.	110—115	...
64,380	Dec. 19	5	5	Torquay & Paignton 5 p.c. Pref.	105—110	...
130,000	Feb. 6	5	8	Wakefield Ord.	116—121*	...
81,650	,,	5	5	Do. 5 p.c. max.	100—105*	...
82,000	Jan. 23	6	6	Weymouth Ord.	101—106	...
98,384	Aug. 22	6	6	Wolverhampton 6 p.c. Pref.	118—123	...
160,000	Dec. 19	5½	5½	Do. 5½ p.c. Rd. Db.	103—108	...
90,000	Dec. 19	5	5	York 5 p.c. Red. Deb. ...	103—108	...
133,640	July 18	6½	6½	Yorktown (Cam.) 5 p.c. Cons.	118—123	...
120,000	,,	5	5	Do. 5 p.c. Pref.	105—110	...
35,000	Dec. 5	5½	5½	Do. 5½ p.c. Deb.	117—122	—3

BRISTOL EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations Feb. 10.	Rise or Fall on Week.
347,756	Feb. 6	5	6	Bath Cons.	115—117*	—2
1,667,250	Feb. 6	5	5	Bristol, 5 p.c. max.	109½—111½*	—2
120,420	Dec. 19	4	4	Do. 1st 4 p.c. Deb. ...	98—101	...
217,870	,,	4	4	Do. 2nd 4 p.c. Deb. ...	98—101	...
328,790	,,	5	5	Do. 5 p.c. Deb.	117—120	...
274,000	Aug. 8	5	5	Newport (Mon.) 5 p.c. max. ...	97—99	...
13,200	Sept. 19	8½	7	Pontyp'l Gas & W. 10 p.c. 'A'	12½—13½	...
13,600	,,	6	5	Do. 7 p.c. 'B' ...	11½—12½	...
40,000	,,	6	5	Do. 7 p.c. 'C' ...	11½—12½	...
140,778	Feb. 6	5	5	Weston-super-Mare Cons. ...	104—106*	—2
64,338	Dec. 19	4	4	Do. 4 p.c. Deb. ...	98—101	...
33,340	,,	7½	7½	Do. 7½ p.c. Deb. ...	149—152	...

LIVERPOOL EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations Feb. 10.	Rise or Fall on Week.
157,150	Feb. 6	5	6½	Chester 5 p.c. Ord.	107—110*	—1½
92,500	Dec. 19	4	4	Do. 4 p.c. Pref.	95—99	...
36,430	,,	3½	3½	Do. 3½ p.c. Deb.	87—90	...
41,890	,,	4	4	Do. 4 p.c. Red. Deb. ...	97—101	...
2,167,410	Aug. 22	6	6	Liverpool 5 p.c. Ord.... ...	122—124	...
245,500	Dec. 19	5	5	Do. 5 p.c. Red. Pref. ...	100—105	...
306,083	Jan. 23	4	4	Do. 4 p.c. Deb.... ...	100—102	...
106,280	Feb. 6	10	10	Preston 'A' 10 p.c.	177—187*	—21
188,219	,,	7	7	Do. 'B' 7 p.c.	129—139*	—2

NEWCASTLE EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations Feb. 10.	Rise or Fall on Week.
122,577	Aug. 8	8	8	Blyth 5 p.c. Ord.	160—162	...
732,000	Aug. 22	5	5	Hartlepool G. & W. Cn. & New	82—83	...
2,061,315	Feb. 6	5	5½	Newcastle & Gateshead Con.	22/6–23/–a*	—3
682,856	,,	4	4	Do. 4 p.c. Pref. ...	98½—99½*	—1½
776,706	Dec. 19	3½	3½	Do. 3½ p.c. Deb. ...	88½—89½	...
277,285	Oct. 24	5	5	Do. 5 p.c. Deb. '43 ...	103½—105½	...
332,351	Feb. 6	6	6	Sunderland 6 p.c. max. ...	132½—134½*	—2½

NOTTINGHAM EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations Feb. 10.	Rise or Fall on Week.
542,270	Feb. 6	6	9	Derby Con.	130—135*	—3
55,000	Dec. 19	4	4	Do. 4 p.c. Deb.	100—105	...
20,000	Dec. 19	5	5	Long Eaton 5 p.c. Pref. ...	10—12	...
80,000	,,	5	5	Do. 5 p.c. Deb. ...	105—110	...

SHEFFIELD EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations Feb. 10.	Rise or Fall on Week.
10,000	Feb. 6	10	10	Great Grimsby 'A' Ord. ...	205—215*	...
6,500	,,	10	10	Do. 'B' Ord. ...	205—215*	...
79,000	,,	10	10	Do. 'C' Ord. ...	195—205*	...
1,806,339	Aug. 22	6½	6½	Sheffield Cons.	139—141	...
95,000	Dec. 19	4	4	Do. 4 p.c. Deb.	100—102	...

a The quotation is per £1 of Stock.

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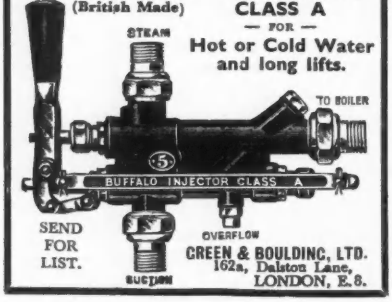

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